

19981022.qrp v01_n252.qrs.981022

Date: Thu, 22 Oct 1998 19:03:09 EDT
From: qrp-l@Lehigh.EDU
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: QRP-L digest 1252

QRP-L Digest 1252

Topics covered in this issue include:

- 1) [22825] Re: Mobile again
by Wayne Alexander <walexan@ipa.net>
- 2) [22826] PY2KC 28.447
by Dick Schneider <rschneid@ix.netcom.com>
- 3) [22827] Re: FOX - HELP
by Wayne Alexander <walexan@ipa.net>
- 4) [22828] NEED HELP WITH QRP-L
by Niels Jensen Kristjansson <nkristja@cadvision.com>
- 5) [22829] Re: [22753] Re: Smallest Transceiver???
by Doug Faunt N6TQS +1-510-655-8604 <faunt@netcom.com>
- 6) [22830]
by borealis@juno.com (Philip G. Collier)
- 7) [22831] Fox - NOT
by Tim Ahrens <tahrens@inetport.com>
- 8) [22832] Re: Smallest Transceiver??? (addendum....)2
by Baranger1@aol.com
- 9) [22833] Wire cutter list
by ac5ez@webtv.net (Larry B)
- 10) [22834] Dan Tayloe's Mixer Design
by Jeff Johnson <jeff@san-dc.com>
- 11) [22835] The Tayloe Mixer
by borealis@juno.com (Philip G. Collier)
- 12) [22836] Re: The Tayloe Mixer
by David Fouchey <dafouchey@jax-inter.net>
- 13) [22837] Several little keys for sale
by Goemans <jgoemans@facstaff.wisc.edu>
- 14) [22838] commercial message
by Denton Bramwell W7DB <Denton@Bramwell.Org>
- 15) [22839] Re: [22753] Re: Smallest Transceiver???
by "Radman" <radman@best.com>
- 16) [22840] FS: QRP stuff
by Dave Redfearn <n4elm@texoma.net>
- 17) [22841] Tayloe Mixer
by KC5TJA <kc5tja@topaz.axisinternet.com>
- 18) [22842] materials: low loss coil forms
by n3fel@juno.com (Howard D Rubin)
- 19) [22843] TAYLOE MIXER (Here it is!)

by Paul Harden <pharden@aoc.nrao.edu>
20) [22844] Elmer 200 status
by PGHDTs@aol.com
21) [22845] testing ignore*
by PGHDTs@aol.com
22) [22846] AEA 10m HT wanted
by tom whalen <whalen@swcp.com>
23) [22847] =?iso-8859-1?Q?=A0_Pacificon_'98_?=
by "Jim Fielden" <fielden@utkux.utcc.utk.edu>
24) [22848] RE: QRP stuff for sale.
by Dave Redfearn <n4elm@texoma.net>
25) [22849] Help Locating Address
by radioham@erols.com
26) [22850] Qrp Altoid Tin
by "WILLIAM T. ROSE" <supertec@mail.myriad.net>
27) [22851] Tayloe Detector, it works!
by Steven Weber <kd1jv@moose.ncia.net>
28) [22852] commercial message II
by Denton Bramwell W7DB <Denton@Bramwell.Org>
29) [22853] Contest Manager Disappears Without a Trace
by "Russ Carpenter" <russ@natworld.com>
30) [22854] The Tayloe Mixer
by Dave Fifield <fifield@pacbell.net>
31) [22855] The Tayloe Mixer
by Dave Fifield <fifield@pacbell.net>
32) [22856] TMOS-FETS
by Gerald_Moritz@pskdd.psk.co.at
33) [22857] materials: low loss coil forms
by n3fel@juno.com (Howard D Rubin)
34) [22858] BCI on 7040?? Why?
by Steve/n0tu <n0tu@webaccess.net>
35) [22859] old article needed
by "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
36) [22860] CQ WW DX CONTEST
by "DONALD G. DORN" <DDORN@swbell.net>
37) [22861] LOOP VS ZEPP
by ARDUJENSKI@aol.com
38) [22862] Identifying IC and Transistors..
by "Timothy McFadden" <micksky@hotmail.com>
39) [22863] Folded Radials
by "James R. Duffey" <ji3m@maxwell.com>
40) [22864] Re: Dan Tayloe's Mixer Design
by Chris Trask <ctrask@primenet.com>
41) [22865] Re: TAYLOE MIXER (Here it is!)
by Chris Trask <ctrask@primenet.com>
42) [22866] good qrp sites in Santa Monica and San Diego
by "Michael L. Miller, M.D." <millerm@merle.acns.nwu.edu>
43) [22867] Re: Fox - NOT

by DNT1@chrysler.com
44) [22868] Fox's log?
by DNT1@chrysler.com
45) [22869] somebody looking for QRP INFRARED TRXMTR & RECVR????
by "GREGORY HEATH" <KB2QQM@email.msn.com>
46) [22870] Re: old article needed
by haf47@juno.com
47) [22871] Tayloe mixer
by "Michael A. Gipe" <mgipe@reliablemeters.com>
48) [22872] Re: TAYLOE MIXER (Here it is!)
by jeverhar@cse.l-3com.com
49) [22873] Any body built any of the Vectronics kits??
by "GREGORY HEATH" <KB2QQM@email.msn.com>
50) [22874] Re: Any body built any of the Vectronics kits??
by Paul Harden <pharden@aoc.nrao.edu>
51) [22875] Re: TAYLOE MIXER (Here it is!)
by Chris Trask <ctrask@primenet.com>
52) [22876] Re: CQ WW DX CONTEST
by Monte Stark <ku7y@dri.edu>
53) [22877] Re: Tayloe mixer
by Chris Trask <ctrask@primenet.com>
54) [22878] RE: CQ WW DX CONTEST
by Martin Squicciarini <MSquicciarini@McGettigan.com>
55) [22879] Re: TAYLOE MIXER (Here it is!)
by "Michael A. Gipe" <mgipe@reliablemeters.com>
56) [22880] FW: old article needed
by Art Marshall <artm@t-com.com>
57) [22881] Re: LOOP VS ZEPP
by Terry Conboy <terry.conboy@airtouch.com>
58) [22882] Re: Tayloe mixer
by "Michael A. Gipe" <mgipe@reliablemeters.com>
59) [22883] Re: CQ WW DX CONTEST
by "Michael A. Gipe" <mgipe@reliablemeters.com>
60) [22884] More Tayloe Mixer Info
by ki6ds@dpol.k12.ca.us (Hendricks, Doug)
61) [22885] IT/, HB9/ and DL/ ops
by "James A. Carmody" <carmodyjim@earthlink.net>
62) [22886] Re: Tayloe mixer
by Chris Trask <ctrask@primenet.com>
63) [22887] Re: FAQ: Best backpacker antenna
by art.silvers@pop3.kaiperm.org (Art Silvers)
64) [22888] Re: Any body built any of the Vectronics kits??
by W5TB <w5tb@SoftHome.net>
65) [22889] Vectronics QRP Kits
by "Ken & Linda Burrough" <ne0c@1st.net>
66) [22890] Re: Any body built any of the Vectronics kits??
by Dave Hassell <deh@tadpole.com>
67) [22891] Re: Voice-Balancing Audio Clipper?

- by Brad Bradfield <b_bradfield@yahoo.com>
- 68) [22892] Re: TAYLOE MIXER (Here it is!)
by Paul Harden <pharden@aoc.nrao.edu>
- 69) [22893] Pacificon Speakers for Next Year (1999)
by ki6ds@dpol.k12.ca.us (Hendricks, Doug)
- 70) [22894] New Product: Hi-Mound BK-200 Bug
by "Marshall Emm" <mgemm@mtechnologies.com>
- 71) [22895] Re: TAYLOE MIXER (Here it is!)
by Dan Tayloe-P26412 <Dan_Tayloe-P26412@email.mot.com>
- 72) [22896] Resonant Speakers and Acoustics.
by Ed Loranger <we6w@qsl.net>
- 73) [22897] Re: Tayloe mixer
by "Michael A. Gipe" <mgipe@reliablemeters.com>
- 74) [22898] Vernier dials, SSTs, Pacificon, etc
by Grant Taylor <k7gt@qsl.net>
- 75) [22899] Re: TAYLOE MIXER (Here it is!)
by Chris Trask <ctrask@primenet.com>
- 76) [22900] FOX: Fox log for Oct 21, 1998 kv2x Fox
by Thomas Jennings <jennings@eng14.rochny.uspra.abb.com>
- 77) [22901] Re: TAYLOE MIXER (Here it is!)
by KC5TJA <kc5tja@topaz.axisinternet.com>
- 78) [22902] Wanted: Sep 1997 issue of RF Design
by Grant Taylor <k7gt@qsl.net>
- 79) [22903] Re: Tayloe Mixer and Trask Feedback Mixer
by "Michael A. Gipe" <mgipe@reliablemeters.com>
- 80) [22904] Re: Tayloe mixer
by KC5TJA <kc5tja@topaz.axisinternet.com>
- 81) [22905] Re: More Tayloe Mixer Info
by KC5TJA <kc5tja@topaz.axisinternet.com>
- 82) [22906] Re: Wanted: Sep 1997 issue of RF Design
by "Michael A. Gipe" <mgipe@reliablemeters.com>
- 83) [22907] FOX: Fox log for Oct 21, 1998 kv2x Fox
by "Edward A Kwik jr" <eakwikjr@hti.com>
- 84) [22908] 44 Magnum
by elawson@lr.net (Ed Lawson)
- 85) [22909] Wanted: Benchner and Keyer
by Bob Painter <turnkey@exo.com>
- 86) [22910] Re: Tayloe mixer
by Glen Leinweber <leinwebe@mcmail.cis.mcmaster.ca>
- 87) [22911] Log Periodic Dipole design?
by John McKee <JMcKee@RFMD.com>
- 88) [22912] Re: old article needed
by "Doug Hauff" <slmachco@fix.net>
- 89) [22913] Another Mixer
by "Fishman, Clark" <cfishman@pica.army.mil>
- 90) [22914] Dentron 160 meter qrp long wire antenna tuner Question?
by "Freeberg, Scott (STP)" <scott.freeberg@guidant.com>
- 91) [22915] Autek filter QF-1

by Dave Hassell <deh@tadpole.com>
92) [22916] Re: CQ WW DX CONTEST
by "david r" <elbc@pivot.net>
93) [22917] NEED HELP WITH FT-707
by FrConrad@aol.com
94) [22918] Re: Autek filter QF-1
by "david r" <elbc@pivot.net>
95) [22919] Re: Help with understanding of L-networks
by "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
96) [22920] Dan Tayloe's Mixer
by Bob Hightower <ki7mn@extremezone.com>
97) [22921] Re: Identifying IC and Transistors..
by "Michael A. Newell" <wb4huc@texas.net>
98) [22922] Re: old article needed
by "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
99) [22923] Re: Identifying IC and Transistors.. (book)
by "Radman" <radman@best.com>
100) [22924] SGC 2020 Question
by "J. Duffy Beischel" <jduffy1@ix.netcom.com>

Date: Wed, 21 Oct 1998 18:17:29 -0500
From: Wayne Alexander <walexan@ipa.net>
To: qrp-1@Lehigh.EDU
Subject: [22825] Re: Mobile again
Message-ID: <199810212317.SAA10557@ns3.ipa.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hello Jeff,

I use mobile CW everyday. 10,12,and 15 has been hot. I chase DX on my lunch hour every day. It is a lot of fun and miss it when I don't get to play. Have fun and hope to hear you on some time.

At 10:40 AM 10/21/98 -0500, you wrote:

>All,

>

>well about 4 years or so ago I use to do a bunch of mobile in my Acura
>Integra with a Ten Tec Argonaut 509 strapped to the top of a toaster oven
>(well the metal from the top of a burnt out one). and had the top in where I
>had taken out the glove box. I tried about ever combo of antenna and had a
>bunch of fun. Was really a challenge in town using the stick shift and doing
>CW with the leg strap.

>

>Now I have to travel about 2 hours each way to take a class once a week.
>Dreaded the long drive after a full day's work and the long drive home at

>night after putting in about 15 hours. Came up with the solution..
>mobile/HF. I looked around and tried to figure out how to put a TS50 (which
>I could have gotten fairly cheaply) in my small LeBaron Convertible.. no
>good way, could have had it on the seat (and used my TT Argosy that way).
>Looked around on the Internet for an Icom 706 or 706 II. Was about to get
>one when I came across a Yaesu FT900sat, with CW filter. Living in the
>sticks has problems.. I have never seen or touched many of the rigs out..
>but what the hay, bought it and had it shipped. Was pretty surprised to see
>how big the rig was.
>
>Goal was to not have any mods to the car, and have it so that if I decided
>to take out radios there would be no permanent damage to car. Took the
>aircraft quality middle brace from my downed Lightning Bolt Quad and bent
>it. Bolted into the metal behind license plate so that hole would always be
>behind plate. Found a couple of grounds. Had to really get creative mounting
>the rig in trunk. Found a place next to the spare tire.. it would be out of
>way here, safe and I can still fit my golf clubs and walking cart in without
>going near rig.. these things are important. Couldn't figure out how to get
>drill in to mount brackets. Finally got about a 3 foot piece of pine board.
>Drilled a hole (only tell tale) in flat metal piece in trunk that holds
>spare. Put a bolt through it and figured out how to press fit other end.
>This way brackets for rig are mounted on board, I can easily swing the board
>in and out of one side to check connections, make changes etc.
>
>Had a Carolina Bug catcher hooked up.. works fantastically, but have to get
>out of car to change bands.. found some hustlers for 10,15,20.40.80. Mounted
>the 10,15,20.40 using a small bracket a friend made for me. The hustler
>tunes all parts of the 3 bands and CW portion of 40, and also tunes 12
>meters (looking to trade my 80 meter for 17 meters).
>
>The set up works fantastically. I get consistently great reports.. even been
>doing SSB, which I haven't done in years. With the rig in trunk, the QSK is
>silent in front. The rig works fantastically on both CW and SSB. They didn't
>really think out some of the design. The power control is on main rig in
>trunk, as is direct freq entry and some other things that might be useful.
>Most of what you need is on detachable panel. It is larger than the IC706,
>which I find to be a great advantage in mobile, I took some black packing
>material and cut it to fit the panel and press fitted the panel in the foam

>and the foam under my 2 meter rig and above the ash tray.. guess some day
>will need to do something more permanent.
>
>Instead of dreading the drive, I now look forward to it. I couple of CW
>contacts and maybe a SSB QSO or two and I am at my destination.
>
>Love this Hobby!!!!
>
>72

>Jeff, AC4HF
>
73,
KB0PTE
Wayne
FISTS # 4907
QRP-L # 1058

Date: Wed, 21 Oct 1998 17:16:02 -0600
From: Dick Schneider <rschneid@ix.netcom.com>
To: qrp-l <qrp-l@Lehigh.EDU>
Subject: [22826] PY2KC 28.447
Message-ID: <362E6B32.3E88DFD6@ix.netcom.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

PY2KC, San Paulo, is flexing his muscles for CQ WW, on 28447. EZ QRP SSB
DX contact.

72 Dick AB0CD..

Date: Wed, 21 Oct 1998 18:20:02 -0500
From: Wayne Alexander <walexan@ipa.net>
To: qrp-l@Lehigh.EDU
Subject: [22827] Re: FOX - HELP
Message-ID: <199810212320.SAA10766@ns3.ipa.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

I agree,It is more fun not to know where he is. i have enjoyed it a
lot,wish they all did that. It is more like a fox hunt, instead of shooting
a fox in his cage. Each to there own.

At 01:48 PM 10/21/98 -0500, you wrote:

>QRP-L Fox Hunters

>

>This is one of the rules of course, but to not know exactly where the FOX
>is between another rule limit of 7.040 MHz +/- 10 kHz makes it a better fox

>hunt. I know, rules is rules.
>
>>1.13 Fox must post PRIOR to operation day with details (rig, ant,
>>freq) regarding their operation.
>
>72/73 -- Chuck, W5USJ, EM22cv, Point, Rains County - Eagle Capital of Texas
>
73,
KB0PTE
Wayne
FISTS # 4907
QRP-L # 1058

Date: Wed, 21 Oct 1998 17:25:16 -0600
From: Niels Jensen Kristjansson <nkristja@cadvision.com>
To: qrp-l@Lehigh.EDU
Subject: [22828] NEED HELP WITH QRP-L
Message-ID: <1.5.4.16.19981021171306.1af760de@cadvision.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable
Content-Transfer-Encoding: quoted-printable

Hi gang!

I have not received any mail from the QRP-L in days now and can=B4t seem to raise anyone that knows what is going on. I even tried to resubscribe but to no avail. I do get mail from other lists and all direct mail so I have no idea what is going on.

Can someone help me on this one as I feel left out (the XYL says I=B4m=20 addicted ;)).

No luck on the last Fox as I could bearly hear him with the DSP and all knobs crancked on my TS-570S, well there is always next time....

Thanks es 72 de Niels VE6NJK/TF3NJ

QRP-L #1239

Date: Wed, 21 Oct 1998 16:44:27 -0700 (PDT)
From: Doug Faunt N6TQS +1-510-655-8604 <faunt@netcom.com>
To: radman@best.com
Cc: Baranger1@aol.com, qrp-1@Lehigh.EDU
Subject: [22829] Re: [22753] Re: Smallest Transceiver???
Message-ID: <199810212344.QAA00882@netcom8.netcom.com>

Date: Tue, 20 Oct 1998 17:41:11 -0700
From: "Radman" <radman@best.com>

Hi Bill,

If you define "all band QRP SSB" as 160-10M SSB, capable of 5 watt operation, the "smallest volume" is found in the SGC-2020 transceiver. It's volume is 113.7 cu in -- down from it's "predecessor," the Index labs QRP+ measuring 132 cu in. For reference, the popular Japanese Icom 706-MK-II (QRP-capable) measures 119.9 cu in in volume.

Kenwood TS-50 = 152.6 cu in
Patcomm PC-9000 = 165 cu in
TenTec Scout = 176.7 cu in
Elecraft K2 = 196.9 cu in

I'm currently researching/writing an article that attempts to demystify the "apples to oranges" comparisons of the above mentioned rigs. Wish me luck ;)

Multiplying out the specifications from Yaesu, the FT-100 comes out at 105.8 cu in. Doing the same for the K2 shows 185.5, and for the 706 shows 117.9 cu in. I'm not sure where Ade come up with his numbers, but if published specs are compared, the FT-100 comes out ahead. It looked just about the same size as the 706 to me, but the specs say it's a little narrower and shorter, but a little deeper. (little means just less than 0.2 in)

So, I'd say the Yaesu is the smallest.
73, doug

Date: Wed, 21 Oct 1998 19:49:51 EDT
From: borealis@juno.com (Philip G. Collier)
To: qrp-1@Lehigh.EDU
Message-ID: <19981021.195315.3342.0.borealis@juno.com>

Paul Harden, NA5N writes:

>I have read Dan Tayloe's description of his new mixer concept,
>and must tell you, this is some true, novel engineering.

Paul, is there a web resource describing the Tayloe mixer design,
or can you tell us a bit more about it here. I'm certainly not the only
ham who gets a thrill out of innovations in radio - especially
something that can help us operate in tough environments.

Someday I plan to set up a portable station near WGY, the local 50KW
powerhouse, and power my radio with rectified RF from the Tom Leykis
show...The rig will definitely need a good mixer <g>.

72,
Phil KG2DH

BTW, I didn't see any aurora here in the Albany area, but did notice
quite a bit of absorbtion and flutter on HF.

You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at <http://www.juno.com>
or call Juno at (800) 654-JUNO [654-5866]

Date: Wed, 21 Oct 1998 18:56:43 -0500
From: Tim Ahrens <tahrens@inetport.com>
To: qrp-l@lehigh.edu
Subject: [22831] Fox - NOT
Message-ID: <362E74BB.4AE66E86@inetport.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Wow, I've never heard 40 like that before... some of
the sounds I can't even describe, and neither the fox
nor hounds were heard at W5FN. The first night I got
to play too! Oh well, there will be more.

Good luck all!

Tim W5FN

Date: Wed, 21 Oct 1998 19:58:03 EDT
From: Baranger1@aol.com
To: qrp-1@Lehigh.EDU
Subject: [22832] Re: Smallest Transceiver??? (addendum....)2
Message-ID: <dabfc31e.362e750b@aol.com>
Mime-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit
Content-Transfer-Encoding: 7bit

Hey Conrad, thanks for the info on the small Transceiver.
I would love to see your article on the rigs when you are done. I have read
some so so things about the 2020
I bet there is a 10-watt version of the FT-100. You may have to get it in
Japan, as they always make a 10, 25 and full power version of all the rigs.
I will have to look for a new copy of Japan's CQ-Ham Radio mag.
72 Bill WB9BQG

Date: Wed, 21 Oct 1998 19:43:29 -0500 (CDT)
From: ac5ez@webtv.net (Larry B)
To: qrp-1@Lehigh.EDU
Subject: [22833] Wire cutter list
Message-ID: <26992-362E7FB1-3933@mailtod-121.bryant.webtv.net>
Content-Type: Text/Plain; Charset=US-ASCII
Content-Transfer-Encoding: 7Bit
MIME-Version: 1.0 (WebTV)
Content-Transfer-Encoding: 7Bit

The revised wire cutter list is as follows.
Frank ab7yt
Niel wa7ssa
Paul ve3cqq
Radman nn6cw
Robert w4bld
Kevin n2to
marv k6hcj
Greg ak7y
Two additional cutters turned up , resulting in an expanded list.

Larry Brandon K1zw
4025 Morgan Drive

Mesquite Texas 75150

German stainless steel 4 and 3/4 inch small blade, wire suture cutters. These wire suture cutters are from a run which failed to sustain there quality (rust dveloped in some areas) after repeated cycles thru an autoclave, which included hundreds of times being subjected to very high temp steam under intense pressure. These particular cutters have never been used, or cycled thru an autoclave.

Any mode of payment is fine. Three bucks should cover cost of shipping and handling etc. The cutters cost me nothing and I pass that non expense along to my fellow hams. Enjoy.
K1zw

Date: Wed, 21 Oct 1998 18:48:51 -0600
From: Jeff Johnson <jeff@san-dc.com>
To: "Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [22834] Dan Tayloe's Mixer Design
Message-ID: <3.0.32.19981021184849.008fc9a0@san-dc.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

I've heard Dan's radio and I was overwhelmed by the quite background of the receiver. I couldn't believe it was 40 meters - not to mention the fact it was in a little tiny qrp rig. I don't have a great deal of experience with different rigs, but the receiver was comparable to the full size rigs I use.

Disclaimer: I stand to gain nothing from the above, and I hope Dan doesn't mind me providing the testimonial - but I thought you might be interested in hearing from someone that has seen and heard the transceiver to verify that it works and works very good.

Paul Harden, NA5N writes:

>I have read Dan Tayloe's description of his new mixer concept,
>and must tell you, this is some true, novel engineering.

Paul, is there a web resource describing the Tayloe mixer design, or can you tell us a bit more about it here. I'm certainly not the only ham who gets a thrill out of innovations in radio - especially something that can help us operate in tough environments.

Someday I plan to set up a portable station near WGY, the local 50KW powerhouse, and power my radio with rectified RF from the Tom Leykis show...The rig will definitely need a good mixer <g>.

72,
Phil KG2DH

BTW, I didn't see any aurora here in the Albany area, but did notice quite a bit of absorbtion and flutter on HF.

You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at <http://www.juno.com>
or call Juno at (800) 654-JUNO [654-5866]

Jeff Johnson
KJ7LO

AZ ScQRPions

Phoenix, Arizona

Date: Wed, 21 Oct 1998 20:53:32 EDT
From: borealis@juno.com (Philip G. Collier)
To: qrp-l@Lehigh.EDU
Subject: [22835] The Tayloe Mixer
Message-ID: <19981021.205337.3342.2.borealis@juno.com>

Reposted due to omitted subject header - never drink Guinness before reading e-mail!

Paul Harden, NA5N writes:

>I have read Dan Tayloe's description of his new mixer concept,
>and must tell you, this is some true, novel engineering.

Paul, is there a web resource describing the Tayloe mixer design, or can you tell us a bit more about it here. I'm certainly not the only ham who gets a thrill out of innovations in radio - especially something that can help us operate in tough environments.

Someday I plan to set up a portable station near WGY, the local 50KW powerhouse, and power my radio with rectified RF from the Tom Leykis show...The rig will definitely need a good mixer <g>.

72,
Phil KG2DH

BTW, I didn't see any aurora here in the Albany area, but did notice quite a bit of absorbtion and flutter on HF.

You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at <http://www.juno.com>
or call Juno at (800) 654-JUNO [654-5866]

Date: Wed, 21 Oct 1998 21:00:42 -0400
From: David Fouchey <dafouche@jax-inter.net>
To: borealis@juno.com, "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [22836] Re: The Tayloe Mixer
Message-ID: <3.0.1.32.19981021210042.007aeb10@jax-inter.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Guiness fixes everything Phil.

Dave Wa4emr

At 08:53 PM 10/21/98 EDT, Philip G. Collier wrote:

>Reposted due to omitted subject header - never drink Guinness before
>reading e-mail!

>

>Paul Harden, NA5N writes:

>

>>I have read Dan Tayloe's description of his new mixer concept,
>>and must tell you, this is some true, novel engineering.

>

>Paul, is there a web resource describing the Tayloe mixer design,
>or can you tell us a bit more about it here. I'm certainly not the only
>ham who gets a thrill out of innovations in radio - especially
>something that can help us operate in tough environments.

>

>Someday I plan to set up a portable station near WGY, the local 50KW
>powerhouse, and power my radio with rectified RF from the Tom Leykis
>show...The rig will definitely need a good mixer <g>.

>
>
>72,
>Phil KG2DH
>
>BTW, I didn't see any aurora here in the Albany area, but did notice
>quite a bit of absorbtion and flutter on HF.
>
>

>You don't need to buy Internet access to use free Internet e-mail.
>Get completely free e-mail from Juno at <http://www.juno.com>
>or call Juno at (800) 654-JUNO [654-5866]
>
>
>

Date: Wed, 21 Oct 1998 20:16:56 -0500
From: Goemans <jgoemans@facstaff.wisc.edu>
To: qrp-l@Lehigh.EDU
Subject: [22837] Several little keys for sale
Message-ID: <199810220114.UAA90068@mail1.doit.wisc.edu>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hi gang,

I am selling several little "backpacking " keys I have. Why ?

1. I have too many keys.
2. I don't backpack.
- 3 I have too many keys.

1) the famous Whiterook MK-44 ultralight small paddle. Base is 2 x 2,
someone several years ago on this list claimed to have put a self-contained
keyer in theirs! \$5 shipped to you in 48 states.
2) the equally famous "Little Red Key" by American Radio QRPKEY Mfg
Co. Small but sturdy straight key. I think he still sells them at Dayton.
The base is about 1 x 1 1/2 ! Large red knob. \$30 shipped to you in 48 states.

72, Paul

Paul R Goemans WA9PWP
1508 Sundt Lane
Stoughton, Wi. 53589-1069 608-877-4151
QRP ARCI 7291 NorCal 1226 QRP-L 127 FISTS 2153 G QRP 9879

Date: Wed, 21 Oct 1998 19:18:57 -0600
From: Denton Bramwell W7DB <Denton@Bramwell.Org>
To: "'qrp-1@lehigh.edu'" <qrp-1@Lehigh.EDU>
Subject: [22838] commercial message
Message-ID: <5103124387F8D11199DD00A0C925E4B916F1@SQLMAILSERVER>
MIME-Version: 1.0
Content-Type: text/plain

Beta Testers Wanted.

We're about to inaugurate a new ham related, online service, and we need a few dozen beta testers. Those that help us beat out the bugs will receive a month's free service, and our undying thanks.

Regardless of what it says at the site, volunteer by email to denton@bramwell.org. We're trying to finish Alpha testing this week, so that Beta testing can start over the week-end. We expect the service to be online within a week or two.

You are welcome to check out the site, WWW.THEBURO.COM, whether you're interested in Beta Testing or not. Just don't try to sign up for an account yet.

Date: Wed, 21 Oct 1998 18:25:03 -0700
From: "Radman" <radman@best.com>
To: "Doug Faunt N6TQS +1-510-655-8604" <faunt@netcom.com>
Cc: <Baranger1@aol.com>, <qrp-1@lehigh.edu>
Subject: [22839] Re: [22753] Re: Smallest Transceiver???
Message-ID: <199810220121.SAA20478@proxy4.ba.best.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Hi Doug et al,

I agree -- it's *very* possible to arrive at different volume calculations for all of the small transceivers :-)
For example: in measuring a TS-50 with a digital caliper -- the "case only" volume (excluding rear heat sink, knobs, lower case bulge, feet and some screw heads) comes out to ~153 cu in -- factory spec volume. Add in all of

the "parenthetical mass" and the rig grows to 205.5 cu in.
Quite a range! I'll be researching these mathematical
anomalies as I move forward with my article.

One thing seems pretty certain, despite the fact that
Yaesu USA, Cerritos, CA, today told me that, "final
dimensions of the FT-100 have not been released to us" --
the FT-100 should be the smallest of the smallest
transceivers. But, it's not quite that obvious to some. If
you remove the "Mr. Potato Head" mic with all of its
control functions/interface... have you subtracted
functionality and reduced the FT-100's mathematical
volume? :-)

Hmmm, maybe I'd better call Ade ! :-)

72 - Conrad Weiss - NN6CW

>>>>Multiplying out the specifications from Yaesu, the
FT-100 comes out at
105.8 cu in. Doing the same for the K2 shows 185.5, and
for the 706
shows 117.9 cu in. I'm not sure where Ade come up with
his numbers,
but if published specs are compared, the FT-100 comes out
ahead. It
looked just about the same size as the 706 to me, but the
specs say
it's a little narrower and shorter, but a little deeper.
(little means just less than 0.2 in)

So, I'd say the Yaesu is the smallest.

73, doug<<<<<

Date: Thu, 22 Oct 1998 20:32:52 -0500
From: Dave Redfearn <n4elm@texoma.net>
To: qrp-l@lehigh.edu
Subject: [22840] FS: QRP stuff
Message-ID: <362FDCC4.B41DAAD5@texoma.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Qrp Stuff for Sale

MFJ-9020 CW transceiver
with keyer module and manual
good shape, minor wear, no mods
\$175.00

Ten-Tec Century 21 CW transceiver
Analog
Receive and PS - OK, goes into TX but no power out.
Probably dead finals, have not had a chance to troubleshoot.
Case covers have been bent in on the front from previous shipping.
Front panel good, slight wear. Original knobs and switches.
Restorable but needs work - this is a project rig.
\$50.00

Ten-Tec 277 tuner
100 watt tuner with balun and SWR meter.
Good shape, slight wear, works great.
Grey color matches Century 21.
\$50.00

Prices negotiable, shipping extra, opinions are free.

73 - Dave.

=====
Dave Redfearn
Email: n4elm@NOJUNKtexoma.net (to reply, remove NOJUNK)
QRL? de N4ELM/qrp

If you don't use CW, you're only working half the band.

Date: Wed, 21 Oct 1998 18:36:35 -0700 (PDT)
From: KC5TJA <kc5tja@topaz.axisinternet.com>
To: qrp-1@Lehigh.EDU
Subject: [22841] Tayloe Mixer
Message-ID: <Pine.LNX.3.96.981021183144.4690B-1000000@amethyst.axisinternet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Dude, if *I* were you, I'd SERIOUSLY consider patenting it, and giving all ham radio licensees the right to use it without royalties. Something like this is wickedly cool. :) Such is the case with the Cross Field Antenna

(patent number 5,155,495).

[although, the circuit presented is essentially a switched capacitor filter, isn't it? Nonetheless -- if it's not patented, do it now!]

Just for reference: Ted E. Hoff invented the world's first microprocessor. Ted owns over 17 patents. However, the microprocessor was so "obvious" a solution to him, that he didn't consider patenting it. Now, someone else has the patent on the microprocessor.

```
=====
      KC5TJA/6      |      -| TEAM DOLPHIN |-
      DM13          |      Samuel A. Falvo II
      QRP-L #1447   |      http://www.dolphin.openprojects.net
      Oceanside, CA |.....
```

Date: Wed, 21 Oct 1998 21:43:01 -0400
From: n3fel@juno.com (Howard D Rubin)
To: qrp-l@Lehigh.EDU
Subject: [22842] materials: low loss coil forms
Message-ID: <19981021.214303.8686.0.n3fel@juno.com>

QRP-L Listers:

I am researching materials and sources for the construction of low loss VHF/UHF coils. The ARRL handbook reviews a number of different materials, but limits their dielectric rating to 1KHz or 1MHz. The best material would seem to be Polyphenylene Sulfide Glass-reinforced R-4 which has a dissipation factor of 0.0014 at 1 MHz. The next best seems to be General Purpose Polystyrene Polymer which has a dissipation factor of 0.0001-0.0003 at 1 KHz.

Does anyone have information at 150 and 450 MHz?
Which material would likely be available in sturdy tubes of 3/4" O.D. (1/2" I.D.)?
Where would I purchase these items?

Can anyone recommend a better material to use?

Howard Rubin, N3FEL

You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at <http://www.juno.com>
or call Juno at (800) 654-JUNO [654-5866]

Date: Wed, 21 Oct 1998 20:02:32 -0600 (MDT)
From: Paul Harden <pharden@aoc.nrao.edu>
To: qrp-l@lehigh.edu
Subject: [22843] TAYLOE MIXER (Here it is!)
Message-ID: <Pine.SOL.3.91.981021195106.26273C-1000000@zia>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Gang,

I am getting a gob of private email wanting to know where the original post is on Dan Tayloe's new product detector design. I guess many of you missed it, as you weren't reading the PacifiCon reports (shame on you!). Dan can't get to his original file until tomorrow, so I am reposting it to the group with his permission to save time.

Read it and enjoy. Some real innovative engineering we should all be proud for coming from "one of our own."

72, Paul NA5N

>From owner-qrp-l@lehigh.edu Tue Oct 20 00:22 MDT 1998
From: tayloe_d@juno.com (Daniel R Tayloe)
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: ScQRPion Stinger Pacificon Design Entry Description

Wow! What an event! For me, the best part was meeting all the people I have met in contests on the air and read about here on QRPL. I am greatly looking forward to next years event!

>Bill and Dan's have never been seen before. I hope that both will
>give a more detailed description here on the list.

I brought a 40m transceiver to enter into the K5FO unlimited design contest. The world probably does not need another 40m transceiver. However, during a 6500 mile trip driving from Phoenix to New York to Florida and back again, I came up with an idea for a new kind of product detector that I *had* to try out. Therefore this rig started out as a "proof of concept" prototype that happened

to worked (and work well!). From there things kind of got out of hand, and it grew into a full blown transceiver.

Some of the measured specifications of the receiver portion of the transceiver:

MDS (Minimum Detectable Signal - measured by ear): -136 dbm
 Two Tone Dynamic Range (2TDR): 111 dB
 Third order intercept: +30 dbm
 Receive Current Drain 60 mA.

Compare these numbers with those of other rigs (info stolen from Jim Duffy, KK6MC & Az ScQRPion Kent Torell):

	Unit	MDS	2TDR	Blocking
	FT101E	142	60	
	TS520	132	63	
	R390	136	82	
	7553B	146	88	<--- Collins 'S' line
radio	Corsair	128	90	
	GQ40	126	90	125
	NN1G	132	90	
	Nor. 40	136	88	108
	Sierra	132	88	100
	FT1000	125	95	125
	TS930	133	95	
	Breed	120	70	90
	Hayward	128	95	125 <--- Hayward's
criteria for contest				
	Mini R2	136	96	<---- from QST article

The transceiver provides superior dynamic range, while satisfying requirements for both good sensitivity, and moderate current drain.

The product detector has less than 1 dB of conversion loss from RF to baseband. This is because it is not really a mixer, producing both sum and difference frequencies, but rather is a "switching integrator", converting most of the input signal to a baseband detected voltage. Lowered conversion loss means that it may be possible to do without an RF preamp on the higher HF bands and still maintain a good noise figure.

The product detector also has the property of being narrow banded. The detector acts like a bandpass filter centered on the frequency

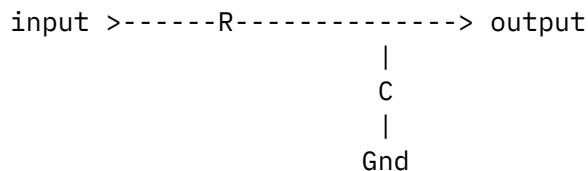
the detector is tuned to. This provides an additional measure of high frequency roll off to the signals that are converted to baseband. This property is unlike any other detector I have worked with and represents "free" additional selectivity.

The detector acts like an open circuit at the frequency it is tuned to. This means that it is no longer necessary to provide a current hungry post amplifier preamp in order to provide a broad band IF termination match across all frequencies to in turn have a high third order intercept. This feature helps keep the drain current of the transceiver to reasonable value.

The detector used in this radio is a new design, based around a 74CBT3253 dual 1 of 4 analog mux. This part is designed for switching microprocessor memory subsystems, and is rated for passing signals up to 300 MHz. I found that it could pass signal of up to 4v pk-pk before distortion.

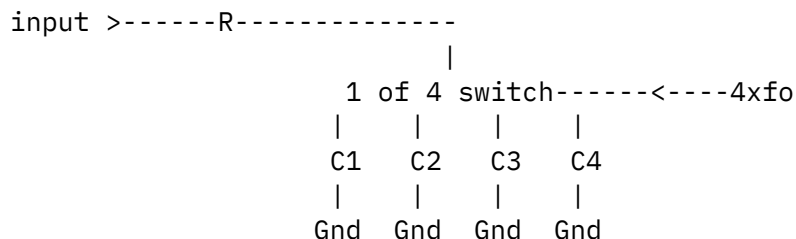
I have dubbed this new product detector the "Tayloe" product detector. Hey, if Gilbert can have the Gilbert cell mixer, I can have the "Tayloe" product detector!

Imagine a R/C low pass filter:



At DC, the C looks like an open circuit, so the output looks like the input. As the input signal frequency increases, C looks more like a short, causing the output to roll off to zero at high frequencies.

Now, imagine using four Cs to ground instead of just one, and imagine a one pole, four position switch continuously sweeping from one C to the next in a continuously rotating pattern:



In the above diagram, the "One of four" switch is sweeping

across the caps at a $4 \times f_o$ rate. Each of the four caps "sees" $1/4$ of a cycle of the input signal. If $4 \times f_o$ is set to 28 MHz, each C will see $1/4$ of a cycle of a 7 MHz signal. These little sample "bursts" of RF are averaged or "filtered" by the Cs. If a signal of exactly 7 MHz is sent into the input, a DC signal will develop across each cap corresponding to the DC average of the RF sine wave seen during that $1/4$ cycle.

Anyway, the long and short of it all, is that the voltage across C1 represents the 0 degree detected audio sampling of the input RF signal, C2 represents 90 degree, C3, 180 degree, and C4 270 degrees. I use one op-amp to sum the 0&180 degree voltages to a single In phase (I) signal, and another to sum 90&270 degree voltages to a Quadrature signal (Q).

Also note that just like the R/C low pass filter causes the signal to roll off as the frequency increases, this detector looks like an open circuit to signals that match the frequency it is tuned to. As the signals move further to either side of this tuned detection frequency, the signals begin to roll off at the R/C rate. My detector uses 50 ohms for R and 0.33 uF for the four detection caps. With a detection bandwidth of 2 KHz at 7 MHz, the detector has an equivalent "Q" of $7\text{MHz}/2\text{KHz}$ or 3500!

Having an Inphase (I) and Quadrature (Q) audio sampling of the RF input signal, these two signal can be combined to provide a single image DC receiver. The current receiver has greater than 45 dB of opposite sideband suppression.

This single circuit replaces an RF splitter, two mixers (both I&Q), and a 90 degree RF phase delay while being able to handle very large signal levels, in this case 4v pk-pk.

The receiver is therefore a simplified "R2" single image, direct conversion receiver. I shamelessly stole parts of his audio phasing design in order to get the audio 90 degree delay necessary for single image reception.

On the other hand, the transmitter has been likewise greatly simplified and currently consists of two NAND gates and a MOSFET. The transmitter puts out 0-5w of adjustable power at 12v, up to 6.5w at 13.8v.

This transceiver can be made to use only one tuned circuit, the low pass filter for the transmitter. This it is relatively easy to construct very high performance, multiband designs. Bands that differ by powers of two such as 80, 40, 20 and 10m are exceptionly easy to accomodate. For my first attempt, I will

modify my current 40m transceiver to cover both 40 and 80 meters.

Oh, well.... Sorry for the long posting. I guess I got carried away. I will be writing up an article on this design for QRPP, so watch this spring for additional details.

- Dan Tayloe, N7VE, Phoenix, AZ, Az ScQRPions, QRPL # 696

Date: Wed, 21 Oct 1998 22:04:57 EDT
From: PGHDTs@aol.com
To: QRP-L@Lehigh.EDU
Subject: [22844] Elmer 200 status
Message-ID: <8f16ee27.362e92c9@aol.com>
Mime-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit
Content-Transfer-Encoding: 7bit

Does anyone know the status of Elmer 200. Can not wait to get some learning.
73 Don KB3CIL

Date: Wed, 21 Oct 1998 22:04:54 EDT
From: PGHDTs@aol.com
To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [22845] testing ignore*
Message-ID: <9c8bf3cf.362e92c6@aol.com>
Mime-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit
Content-Transfer-Encoding: 7bit

test - ignore - thanksbeen having trouble posting

Date: Wed, 21 Oct 1998 17:22:38 -0600
From: tom whalen <whalen@swcp.com>
To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>

Subject: [22846] AEA 10m HT wanted
Message-ID: <362E6CBE.D0@swcp.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

QRPer's!

Still looking for the above unit. Will pay cash/trade. 72, Tom WB5QYT

Date: Wed, 21 Oct 1998 22:34:23 -0400
From: "Jim Fielden" <fielden@utkux.utcc.utk.edu>
To: "QRP-L" <qrp-l@Lehigh.EDU>
Subject: [22847] =?iso-8859-1?Q?=A0_Pacificon_'98_?=
Message-ID: <01bdfd64\$7a8d9d20\$2c17a980@galaxian>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Alright, Sounds like you folks had a GREAT Time at Pacificon '98, now I'm sure a lot more couldn't go than could go, so please tell us (me anyway) MORE!!!! And I want pictures, who has pictures up already? I wanna hear all about how the NC20 looks, how does the 44 Mag feel, Is Ed's Pixie really the ugliest ham radio in the world, WHO WON THE K2???? I wanna hear all about the New Rigs and projects.

Okay I'm sure you get my point, there has been some messages but I want more!!!!!!

72 * Jim, KU4QW - QRP-L # 1481 - G-QRP # 10117
fielden@utkux.utcc.utk.edu - FISTS # 5380 - QRP ARCI # 9789
<http://www.qsl.net/ku4qw/> - No-SSB International (tm) # 1,000,014

Date: Wed, 21 Oct 1998 21:48:01 -0500
From: Dave Redfearn <n4elm@texoma.net>
To: qrp-l@Lehigh.EDU
Subject: [22848] RE: QRP stuff for sale.

Message-ID: <362E9CE1.D844237F@texoma.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

The Century 21 went quick!

I guess someone needed a project.

The rest are still available.

73 - Dave.

=====
Dave Redfearn
Email: n4elm@NOJUNKtexoma.net (to reply, remove NOJUNK)
QRL? de N4ELM/qrp

All opinions are my own, no one else wants them.

Date: Wed, 21 Oct 1998 23:13:45
From: radioham@erols.com
To: QRP-L@Lehigh.EDU
Subject: [22849] Help Locating Address
Message-ID: <3.0.1.16.19981021231345.2a47268e@pop.erols.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

After failing to work (but hearing) the Fox last night, I worked Roberto, CL2BU, in La Habana, Cuba on about 7.030. I was at 5 watts and got a 569 and he was running 10 at a 559. I have looked through several of the on-line directories, as well as the QSL manager directories. Can't find any trace of him, nor have I come across a CL2 before.

Anyone know if this was a real call or have a direct address??

Thanks for your help.

72/73,

Steve, N4EUK
Reston, VA

Date: Wed, 21 Oct 1998 22:32:45 -0500
From: "WILLIAM T. ROSE" <supertec@mail.myriad.net>
To: Qrp-1@Lehigh.EDU
Subject: [22850] Qrp Altoid Tin
Message-ID: <362EA75D.974018E@mail.myriad.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Hey, Guys

I came across a new Tin in the store today It is exactly the same as the Altoid tins but the candy is made in Tacoma, Wa. by Brown & Haley and it is not Mint flavored but Cinnamon. It does have a small amount of mint mixed in and NO Sugar! Its a Orange and White paint scheme With "Extra Strenght Cinnamons" writen across the top lid in a script. So the next Pixie II or 49er may smell a little more like Cinnamon than Mint or Wintergreen. I hope that they do't start packing Garlic in these things

KC5SCC

"Deep in the Heart of Texas"

Date: Wed, 21 Oct 1998 23:19:33
From: Steven Weber <kd1jv@moose.ncia.net>
To: tayloe_d@juno.com
Cc: qrp-1@lehigh.edu
Subject: [22851] Tayloe Detector, it works!
Message-ID: <3.0.3.16.19981021231933.218f2582@mailhost.ncia.net>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Well, dip me in flux, Dan's neat product detector does indeed work!

I cobbled up a "slow speed" version out of 4000's series parts that were handy. A 4017 for the gate sequencer, 4066 analog gate for the detector and a 74AC00 to square up the DDS VFO. Only one phase is summed and haven't tried to find the parts for the analog phase shifter yet.

Since the 4066 has a relatively high "on" resistance, (250 ohms @ 5V), I used the internal resistance of the gates as the intergrating resistor and used 0.1 ufd caps. I have a responce from a few Hz to about 4 KHz. (-6 dBv @ 4 KHz , -10 dBv @ 8KHz) An interesting effect is that the recovered signal is maxium near the zero beat and rolls off from there. It didn't do well as an AM detector, which might be a good attribute. The old cmos gates are being run on 5 volts, so speed is very limited. It max outs at about 1.5 MHz, but is good enough to prove the principal. Very neat. Looks like now I'll have to order the parts for a fast version :-)

But, every good thing has a down side. It takes a fair number of parts to make this detector work, not even including the audio phase shifter stuff, it's still a DC reciever so needs a real lot of audio gain. Finally, the need for a 4x vfo makes things interesting if you want to cover higher than 30 meters.

Nevertheless, the Tayloe mixer has some interesting posibilitys as part of a high dynamic range reciever. It would be really neat if a semiconductor manufacture could be talked into making an intergrated version, with all the bits needed to make it work on one die.

Good work Dan!

73,

Steve, KD1JV....In the White Mountains of New Hampshire

"Melt Solder"

Date: Wed, 21 Oct 1998 22:26:12 -0600
From: Denton Bramwell W7DB <Denton@Bramwell.Org>
To: "'qrp-l@lehigh.edu'" <qrp-l@lehigh.edu>
Subject: [22852] commercial message II
Message-ID: <5103124387F8D11199DD00A0C925E4B916FC@SQLMAILSERVER>
MIME-Version: 1.0
Content-Type: text/plain

Wow! Hit rate went berserk at www.theburo.com after my post.

You're all welcome to look the site over. Beta testers will be generating QSLs in a few days, which you can pick up without having an account or being a tester. If you want to Beta test, drop me a line at denton@bramwell.org.

Date: Wed, 21 Oct 1998 21:48:11 -0700
From: "Russ Carpenter" <russ@natworld.com>
To: "QRP-L List" <qrp-l@Lehigh.EDU>
Subject: [22853] Contest Manager Disappears Without a Trace
Message-ID: <199810220440.VAA07780@guppy.pond.net>
Mime-version: 1.0
Content-type: text/plain; charset="US-ASCII"
Content-transfer-encoding: 7bit
Content-Transfer-Encoding: 7bit

Russ Carpenter, AA7QU, contest manager for Adventure Radio Society, was last seen skulking out of town in the middle of the night. Apparently, he will be in Bhutan until late November.

Fortunately, Richard Fisher, nu6SN, will serve as interim Contest Manager for the November Spartan Sprint. The autolog within the ARS Sojourner (<http://www.natworld.com/ars>) will work in the usual way, except that it will report the results to Richard. If you choose to email your Sprint results, you may reach Richard at nu6SN@aol.com.

Thank you!

The Adventure Radio Society

Date: Thu, 22 Oct 1998 01:09:41 -0700
From: Dave Fifield <fifield@pacbell.net>
To: QRP List <qrp-l@Lehigh.EDU>
Subject: [22854] The Tayloe Mixer
Message-ID: <362EE845.3E57@pacbell.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Dan,

Excellent, brilliantly simple, totally effective. I spent some time thinking about your mixer. It's a winner. The I.F. doesn't have to be audio, right? I believe it has uses as a high performance down-conversion mixer, not just as a DC RX mixer.

You should patent it. I don't believe there is any prior art that would get in its way. It has commercial applications that you should ensure you get a slice of.

The Tayloe mixer is eminantly integratable (in Si) and solves an old problem: that of not having a really good mixer that can be built in CMOS inside a chip very cheaply. The capacitors can be hung externally on four pins, not a problem. The Tayloe mixer fits perfectly into DDS/DSP digital state-of-the-art electronics world.

Why didn't I see or hear of it at Pacificon? Guess I was too busy taking NC20 10turn pot orders...I would have loved to have engaged in a techy conversation with you about it.

Like all the best ideas, it's the simple ones that are the big winners. Good going Dan, keep the ideas flowing. I can't wait to try it out, but I have some other things that have to be done first, like the NC20 manual etc.....

72, Dave Fifield, AD6AY

Date: Thu, 22 Oct 1998 02:02:27 -0700
From: Dave Fifield <fifield@pacbell.net>
To: QRP List <qrp-l@lehigh.edu>
Subject: [22855] The Tayloe Mixer
Message-ID: <362EF4A3.2B03@pacbell.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Ooops,

In an earlier posting I said "The I.F. doesn't have to be at audio, right?". Wrong, it does. The mixer response is narrow band, one frequency (+/- a bit depending on RC) straight down to audio.

However, it is still very useful indeed. Maybe, Dan, you could extend the idea to a more generalized mixer form.....I'll certainly have a think about it.

Cheers,

Dave Fifield, AD6AY

Date: Thu, 22 Oct 1998 13:19:38 +0200
From: Gerald_Moritz@pskdd.psk.co.at
To: qrp-1@lehigh.edu
Subject: [22856] TMOS-FETS
Message-ID: <C12566A5.0036DE0E.00@PSKDD.PSK.CO.AT>
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii

Just an idea (or question):

Here in Austria there are only a few people who are really interested in QRP.

If I have a question to HF-Designers in our club (Section Vienna of the Austrian AR-Society) I always get as an answer:
"Don't build it, buy it." That is the wrong answer !!! The REAL FUN-FACTOR is to reach highest distances with the lowest possible power with homebrewed Rigs. I can say for myself that a Rig out of a shop only gives a quickstart for an interesting section.

After designing a cw-id device (I gave a little description a few weeks ago on this list) I try to improve my 2W-TX (BD139; in an early version there was a influence between the Pi-filter-coil and the (non-isolated) cooling device of the BD139 - Thanks to OE1TKW for being my Elmer).

I now have started new from the beginning: from calculating the voltage-divider for input and calc. the pi-filter-section at the end of the amplifier. I can't tell how much fun it was. The more I read about QRP-TX the more I can sing "I can get no satisfaction....".

I am just trying to draw a PCB for a MOS-FET amp. using a IRF520/530 to lift my 2W to 50W. (I know, it is no qrp anymore, but building is much more thrill to me than transmitting to the world, sorry).

Now I have heard about TMOS-FETS from Motorola and that they can be used for homebrewing, too (e.g. MPF910, MTP12N10 and so on). After first calc. (hi) efficiencies of 84% should be possible without problems. One negative point is the high input-impedance (abt. 700-1200pF). Are there any qrp-ers who have experience with such devices and is any circuit-diagram available ?

Will try to ask my brother to give a scanned circuit-description to his homepage. I will inform you if there is anything available.

Greetings from Vienna, Austria de Gerald, OE1GOD
(JN88ee)

Date: Thu, 22 Oct 1998 06:30:40 -0400
From: n3fel@juno.com (Howard D Rubin)
To: qrp-l@lehigh.edu
Cc: cla@mcg.net
Subject: [22857] materials: low loss coil forms
Message-ID: <19981022.063042.8814.0.n3fel@juno.com>

Claton,

Thanks for your immediate response.

Air core may be the best, but it doesn't provide a great deal of stability. The coil form in my application will not only support the windings, but support the radials and driven element. I'm considering an air-like structure using plexiglass spacers held together by top and bottom dowels in hardwood. However, large diameter structures also increase wind resistance, thus placing more strain on the radial system. The radials will provide groundplane and bottom support to the system.

Howard Rubin, N3FEL

On Wed, 21 Oct 1998 21:24:01 -0500 applitech@mcg.net (Claton Cadmus) writes:
>I'm not sure what your after in a VHF/UHF coil reactance, but the best
>low
>loss coils I know of are air wound coils using large diameter wire. I
>have
>build VHF filters using #12 ga wire to reduce filter losses. They
>work
>quite well.
>

>Hope this Helps,
>
>73 de Cla KA0GKC
>
>
>

You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at <http://www.juno.com>
or call Juno at (800) 654-JUNO [654-5866]

Date: Thu, 22 Oct 1998 05:12:15 -0700
From: Steve/n0tu <n0tu@webaccess.net>
To: qrp-l@Lehigh.EDU
Subject: [22858] BCI on 7040?? Why?
Message-ID: <362F211F.3C31@webaccess.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

I've been on 7040 between 1100 to 1300 utc (4-6am MDT) in the early mornings lately. The frequency has been clobbered by shortwave broadcast. I don't remember seeing any band plans for SW stns in this part of the spectrum. At first I thought it was my rx but several other stations I worked were complaining about it too. Reminds me of my old novice days having to fight the carriers! So does anybody know why is there's BCI on 7040?

n0tu...steve

Date: Thu, 22 Oct 1998 07:57:12 -0400 (EDT)
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
To: QRP-L List <qrp-l@lehigh.edu>
Subject: [22859] old article needed
Message-ID: <Pine.GS0.3.96.981022075455.26739E-100000@moe.cas.utk.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Message-ID: <e8c14026.362f3548@aol.com>
Mime-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit
Content-Transfer-Encoding: 7bit

WX permitting I was going put up a vertical 80M LOOP with the dimensions (approx) 20 ft on the sides and 120 ft horizontal wires and fed at mid bottom with open feed. Top wire will be up 50 ft. From the EXPERTS and those going thru trial and tribulations should I expect a significant improvement over the DOUBLE ZEPP (40M) up 55 ft)??

Alan KB7MBI

Date: Thu, 22 Oct 1998 15:43:07 CEST
From: "Timothy McFadden" <micksky@hotmail.com>
To: QRP-L@lehigh.edu
Subject: [22862] Identifying IC and Transistors..
Message-ID: <19981022134307.9763.qmail@hotmail.com>
Content-Type: text/plain

In my travels I happened upon a small container of IC's and Transistors. My question is just what is the quickest way, (publications or web-sites) that I can ID these things.

Tnx for the help.
BTW I am really dying to get back to the States so that I can join in on the Fox hunts..

73's

Tim McFadden KB2RLB/DA2TF, QRP# 668

Get Your Private, Free Email at <http://www.hotmail.com>

Date: Thu, 22 Oct 1998 08:26:48 -0600
From: "James R. Duffey" <ji3m@maxwell.com>
To: ARDUJENSKI@aol.com
Cc: qrp-l@Lehigh.EDU
Subject: [22863] Folded Radials
Message-ID: <v03007800b254ecde91a9@[199.120.49.100]>

Mime-Version: 1.0

Content-Type: text/plain; charset="us-ascii"

Alan - I haven't seen an answer to your questions on folded radials, so I thought I would take a stab at it;

"QUESTION 1: If you fold back an antenna on itself I understand that the folded portion generally cancels itself out. If this is true does it apply to radials also??"

The answer is yes, the currents cancel so that there is no radiation from the radials. For radials this is fine since you want the vertical antenna to radiate and not the radials. However the folded length should be made resonant.

"QUESTION 2: Most folks subscribe to the 1/4 wave radial theory. However there are papers that show if the radials are elevated about 0.05 wavelength you can use 0.015 wavelength radials. I was wondering if someone could clarify?"

The subject of buried (or on the ground) radials versus elevated radials is a controversial one. Without taking sides, if the radial is on or buried in the ground it doesn't make sense to make it resonant as the ground will detune it significantly.

For elevated radials, they should be resonant, particularly if there are only a few of them. The length at resonance will be quite different close to the ground than in free space, or even at a nominal elevation.

The best thing to do is resonate the radials in place in pairs, treating them as halves of a dipole. This goes for the folded radials you asked about in question 1 as well. You can resonate them by simply cutting to length, or by inserting a coil in short radials. Tuning and operation a loaded radial can be tricky though as the bandwidth can be quite narrow.

By the way, a radial length of 0.015 wavelengths is quite short. Are you sure you didn't mean 0.15?

You should probably read L. B.'s web page article on grounds and radials for verticals. Lots of good information there.

I hope that this helps. It was nice to work you in the NERDS contest. - Dr. Megacycle KK6MC/5

James R. Duffey
Maxwell Technologies Inc.
2501 Yale Blvd SE Suite 300
Albuquerque, NM 87106-4200

<jr3m@maxwell.com> (505) 764-3143
<http://www.maxwell.com/>

> Paul Harden, NA5N writes:

```
> >I have read Dan Tayloe's description of his new mixer concept,
```

> >and must tell you, this is some true, novel engineering.

```
> Paul, is there a web resource describing the Tayloe mixer design,
```

> or can you tell us a bit more about it here. I'm certainly not the only

> ham who gets a thrill out of innovations in radio - especially

```
> something that can help us operate in tough environments.
```

I'd be very interested in seeing this mixer also.

$$\overline{oo} \setminus ()$$

Chris Trask / N7ZWY

Principal Engineer

ATG Design Services

P.O. Box 25240

Tempe, Arizona 85285-5240

Technical Editor,

ORP Quarterly

ORP ARCI 9464

Email: ctrask@primenet.com

<http://www.primenet.com/~ctrask>

Graphics by Loek Frederiks

Date: Thu, 22 Oct 1998 07:42:43 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: Paul Harden <pharden@aoc.nrao.edu>
Cc: Daniel Tayloe <tayloe_d@juno.com>, Low Power Amateur Radio Discussion <qrp-
l@lehigh.edu>
Subject: [22865] Re: TAYLOE MIXER (Here it is!)
Message-ID: <Pine.BSI.3.96.981022073551.8324C-1000000@usr07.primenet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Wed, 21 Oct 1998, Paul Harden wrote:

>
> Gang,
> I am getting a gob of private email wanting to know where the original
> post is on Dan Tayloe's new product detector design. I guess many of
> you missed it, as you weren't reading the PacifiCon reports (shame on
> you!). Dan can't get to his original file until tomorrow, so I am
> reposting it to the group with his permission to save time.
>
> Read it and enjoy. Some real innovative engineering we should all be
> proud for coming from "one of our own."

> <<SNIP>>

> Imagine a R/C low pass filter:

> input >-----R-----
> |
> 1 of 4 switch-----<----4xfo
> | | | |
> C1 C2 C3 C4
> | | | |
> Gnd Gnd Gnd Gnd

>
> In the above diagram, the "One of four" switch is sweeping
> across the caps at a 4xfo rate. Each of the four caps "sees"
> 1/4 of a cycle of the input signal. If 4xfo is set to 28 MHz,
> each C will see 1/4 of a cycle of a 7 MHz signal. These little
> sample "bursts" of RF are averaged or "filtered" by the Cs. If

```
> a signal of exactly 7 MHz is sent into the input, a DC signal
> will develop across each cap corresponding to the DC average of
> the RF sine wave seen during that 1/4 cycle.
>
> Anyway, the long and short of it all, is that the voltage across
> C1 represents the 0 degree detected audio sampling of the input
> RF signal, C2 represents 90 degree, C3, 180 degree, and C4 270
> degrees. I use one op-amp to sum the 0&180 degree voltages to a
> single In phase (I) signal, and another to sum 90&270 degree
> voltages to a Quadrature signal (Q).
>
```

Ah, this is another application of the commutative filter. I've made a number of these, up to 32 bits, and they make excellent tracking filters.

There is a method for improving the rolloff characteristics, wherein two switched banks are used in conjunction with a feedback path, which adds a zero to the transfer function.

I just gave a paper at RF Design 98 this last Tuesday about my feedback mixer, which now has a patent pending. I'm getting up to a 40dBm IP3 with these with 0dBm of LO power and 20mA of 12V DC power.

```
.
'-----'.
/\      \
 /        \ What's all this
/_         \ extinct stuff, anyhow? \_
\          /-----'\
 ||/
oo\
(--)\\
 \\   \\ . ' - .
  \\   \\ ' "    \\
   \\   \\       \\
    \\   \\ ( )    \\
     \\   | _| :.   \\
      \\  | | | | \\'
       c__; c__; '... '>. __
```

Circuit Design for the RF Impaired

Chris Trask / N7ZWY
Principal Engineer
ATG Design Services
P.O. Box 25240
Tempe, Arizona 85285-5240

Technical Editor,
QRP Quarterly
QRP ARCI 9464

Email: ctrask@primenet.com
<http://www.primenet.com/~ctrask>

Graphics by Loek Frederiks

Date: Tue, 20 Oct 1998 09:42:59 -0500
From: "Michael L. Miller, M.D." <millerm@merle.acns.nwu.edu>
To: qrp-l@Lehigh.EDU
Cc: millermd@nwu.edu
Subject: [22866] good qrp sites in Santa Monica and San Diego
Message-ID: <199810221443.KAA16066@nss4.cc.Lehigh.EDU>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

As I have mentioned previously, I will be in Santa Monica on November 7th and San Diego November 8th. It seems no one may be able to get together with me, but I am still taking a QRP set up with me. So, now my question is --
What good sites in Santa Monica and San Diego are there for QRPing?
I will not have a car in Santa Monica, but could grab a taxi, I suppose. I will have a car in San Diego.

Thanks!

72 de KG9ML
Mike

Michael L. Miller, MD
millermd@nwu.edu

Date: Thu, 22 Oct 1998 10:49:43 -0400
From: DNT1@chrysler.com
To: tahrens@inetport.com
Cc: qrp-l@lehigh.edu
Subject: [22867] Re: Fox - NOT
Message-ID: <852566A5.005169C9.00@lmgodd02.notes.chrysler.com>
Mime-Version: 1.0
Content-type: text/plain; charset=us-ascii
Content-Disposition: inline

Tim (W5FN) wrote:

> Wow, I've never heard 40 like that before... some of
> the sounds I can't even describe, and neither the fox
> nor hounds were heard at W5FN.

I heard the fox get started, not much of a signal near the AL/TN state line. At about 0220 something rolled in & covered up everything from 7.033 - 7.045 MHz, stayed until about 0250 & then disappeared! It was a low rumbling sound, almost like a digital signal WAY out of phase! Maybe a

strong harmonic from a radar unit? Anyhow, the fox & hounds disappeared (as did everything else that was there) as I fiddled with all of the controls on my rig to make it go away. I found N4XD calling in a pattern consistent with the hunt, so I tweaked & twiddled until I heard a few other signals on his frequency, using him as a beacon for the hunt! I switched in the DSP, fiddled with it a while & finally got the fox back in my sights. I bagged him around mid-hunt, using a straight key for my choice of weapon to make it through the QRM w/o confusion from mis-keying. Got up & did my happy dance as he came back with the confirmation, afterwards settling back into the chair to practice copying signals out of the pileup. By 0315-0320 his signal was up considerably, a good 479 with all of the filters off. Oh well, at least that ought to make it easier for someone else to bag him! ;-)) With the band improving, I went hunting in the novice band for KC5TJA but didn't have any luck there. I'll go looking for him again tonight, maybe I'll bag a fox and a Tech plus too!

72,

Don T. AI4CW QRP-L # 1670 Fists #4473

Date: Thu, 22 Oct 1998 10:52:51 -0400
From: DNT1@chrysler.com
To: qrp-l@Lehigh.EDU
Subject: [22868] Fox's log?
Message-ID: <852566A5.0051B1BB.00@lmgodd02.notes.chrysler.com>
Mime-Version: 1.0
Content-type: text/plain; charset=us-ascii
Content-Disposition: inline

Has anyone heard from Tuesday/Wed. Fox about the log? I haven't seen a copy, just wondered if I had missed it!

Don T. AI4CW QRP-L#1670

Date: Thu, 22 Oct 1998 10:50:46 -0400
From: "GREGORY HEATH" <KB2QQM@email.msn.com>
To: "QRP-L (SENDING ? TO QRP-L)" <qrp-l@Lehigh.EDU>
Subject: [22869] somebody looking for QRP INFRARED TRXMTR & RECVR????

Message-ID: <08a1330531416a8UPIMSSMTPUSR03@email.msn.com>

I think someone was looking for an infrared transmitter and receiver project kit earlier this week. there is one in the tech america catalog... part #990-0059, 990-0070, 990-0081 \$23.00
www.techam.com pg 484 of the catalog....or 1-800-877-0072
I hope this was what you were looking for.....and i dont work for the company and all that mumbo jumbo. :-) greg

Date: Thu, 22 Oct 1998 10:55:14 -0400
From: haf47@juno.com
To: cebik@utkux.utcc.utk.edu
Cc: qrp-1@Lehigh.EDU
Subject: [22870] Re: old article needed
Message-ID: <19981022.110139.9094.0.haf47@juno.com>

Howdy,

My local library has most QST's back to 1914 although there are a few copies missing. They are bound, and a bit difficult to copy as the magazines are a much smaller format, and sometimes make a distorted copy.

I will go to library today and seek your info, and do my best for you.

They also have stuff written by L.B. Cebik. Not too bad, but the grammer used doesn't include words like " ain't" and phrases like "don't got". I read it anyway.

73, Howie

WA2AFD
haf47@juno.com

On Thu, 22 Oct 1998 07:57:12 -0400 (EDT) "L. B. Cebik"
<cebik@utkux.utcc.utk.edu> writes:
>Does anyone happen to have the October, 1937, QST, and be able to
>photocopy me an article on a "bent Yagi" by W1QP and W8CPC? Be glad
>to
>cover the cost of copying and postage.
>
>-73-
>

```

>LB, W4RNL
>
> L. B. Cebik, W4RNL      /\  /\      *   /   /   /   (Off) (423)
>974-7215
> 1434 High Mesa Drive   /  \/  \/  \   ----/\----   (Hm) (423)
>938-6335
> Knoxville, Tennessee /\   \   \ \   /   /  || /   (FAX) (423)
>974-3509
> 37938-4443    USA      /   \   \ \   ||
>cebik@utk.edu
>  QRPARCI 2572  G-QRP 7203  CQC 125  NEQRP 347  NORCAL 1111  MIQRP
>1432
>  QCWA 13211   10-10 41159  FISTS 2600  NWQRP 401  scQRP 28  AK/QRP
>343
>  ARRL Life: Tech. & Edu. Advisor  CW Ops QRP Club (VK) 476  ARS
>411
>
>          http://web.utk.edu/~cebik/radio.html
>
>
>
>
>

```

You don't need to buy Internet access to use free Internet e-mail.
 Get completely free e-mail from Juno at <http://www.juno.com>
 or call Juno at (800) 654-JUNO [654-5866]

Date: Thu, 22 Oct 1998 08:10:26 -0700
 From: "Michael A. Gipe" <mgipe@reliablemeters.com>
 To: "QRP-L list" <qrp-l@Lehigh.EDU>
 Subject: [22871] Tayloe mixer
 Message-ID: <03e501bdfdc\$1bf8c360\$140a0a0a@double_trouble.reliablemeters.com>
 MIME-Version: 1.0
 Content-Type: text/plain;
 charset="iso-8859-1"
 Content-Transfer-Encoding: 7bit
 Content-Transfer-Encoding: 7bit

Dan --

The Tayloe Mixer looks like a dynamite innovation. Well done.

A few comments/questions:

It seems to me that good opposite sideband rejection would be very

dependent on the match between the integrating capacitors (and series resistors, but those are easier to match). A 1% match gets you a little better than 40 dB, assuming that the switches track well and are pretty linear at the signal levels involved. Getting beyond that starts putting some pretty tight requirements on the match. However, once matched, it should be pretty much independent of frequency. Have you played with this? You also need good low-D caps.

It also seems that a limiting factor at the low signal end would be charge injection in the FET switches. Keeping the integrating impedance low helps here (big caps, small Rs), but this puts more burden on the FET switch characteristics, requiring closer on-resistance tracking, and larger transistor structures which lead to more charge injection -- oops. I don't know what the specs on the CBT mux are. Have you calculated the effects on the performance due to the switch limitations? This would be helpful for translating the design to other implementations, including ASIC.

Speaking of ASICs, it seems that this would be a good candidate for an IC, especially if it was possible to scale the caps down to where they could be implemented on-chip. On second thought, junction based caps would probably be miserable due to varactor effects, so the only usable integrated caps would be MOS, which probably means they couldn't be big enough. Where's Chris Trask when you need him?

Another thought I had is that large signal handling ability is inversely proportional to bandwidth! What a wild concept. The lower the bandwidth, the lower the gain, and the lower the input impedance. Interesting. I'm not sure what this all implies, though. Your thoughts?

I wonder if there would be any problems with DC bias currents in the switches under very low signal level conditions. This would be where the input signal, including noise, is smaller than the leakage currents in the FET. You might be gradually accumulating DC offset. I guess this would depend a lot on the source impedance, so a low DC source impedance would fix it (choke to ground). Does this make sense?

This is exciting stuff, Dan.

Mike K1MG

Date: Thu, 22 Oct 98 11:10:43 EDT
From: jeverhar@cse.l-3com.com
To: qrp-l@lehigh.edu
Cc: tayloe_d@juno.com, ctrask@primenet.com, pharden@aoc.nrao.edu
Subject: [22872] Re: TAYLOE MIXER (Here it is!)
Message-ID: <9810221510.AA07021@train11.cse.l-3com.com>

Chris wrote:

(SNIP>

> Ah, this is another application of the commutative filter. I've
> made a number of these, up to 32 bits, and they make excellent tracking
> filters.
>
>

<MORE SNIP>

I can't resist commenting! What a clever design you have come up with!

Dan, it really sounds like you have a winner here! My first thought when I saw the original posting is that it was veyr much like the commutating filter I used 20+ uears ago. I was working for the Pulsar Watch folks and I put a paging reciever into a wristwatch. However it was merely an audio filter for detecting paging tones. I didn't evne think of using it as an RF signal detector

The second thought was mentioned yesterday as well. that detector is eminently sutable for being fabricated into a monoolithic chip (with external capacitors). (That was one of our goals with the wristwatch pager.)

The world is looking for single-chip designs these days. Thsi looks like a good candidate. And your transmitter might be up that alley as well. Wos, with a DDS, a receiver ASIC and a tranmsitter ASIC a super mini QRP rig would be a snap! Oops this osunds too much like what some of us do all day long at work!

72/73,

Joe E., N2CX

P.S. Anxiously awaiting more details!

Date: Thu, 22 Oct 1998 11:13:35 -0400

From: "GREGORY HEATH" <KB2QQM@email.msn.com>
To: "QRP-L (SENDING ? TO QRP-L)" <qrp-l@Lehigh.EDU>
Subject: [22873] Any body built any of the Vectronics kits??
Message-ID: <094a619161516a8UPIMSSMTPUSR03@email.msn.com>

Hi, I was cruising thru the TechAmerica catalog this morning and noticed that they make or sell Vectronics Cw transmitter kits and Amplifier kits and Receivers....anybody tried these??

Are these the same kits that Ramsey sells that really dont EVER work. I tried building a Ramsey Amplifier once and when I got finished, I checked my work carefully, and then cleared the workbench, and turned it on.....The dog and I were staring at the board....the dog backed up and started barking at it when it caught fire.... Even my dog was upset...

Thats a pretty bad....when your dog is upset. So I sent the rig to Ramsey and paid them like \$40 to fix it.....They said they fixed it, but it never worked...I was out like \$100....and no working amp. Experience is a wonderful teacher...next time I will just throw my money out the window. I am just wondering If anyone here has built one of the kits by vectronics.

"these of course are my own opinions"

(What a silly comment, if it was not my own, you wouldnt be reading it.....I feel like I am reading the 'instructions' on the side of a ladder for my own 'protection' Step one (no pun)

"climb-up"..... step two(no pun) ok...."now climb down"... those who dont follow these rules can be injured....etc... and other useless ramblings)my own opinion of course.....

Date: Thu, 22 Oct 1998 09:30:14 -0600 (MDT)
From: Paul Harden <pharden@aoc.nrao.edu>
To: GREGORY HEATH <KB2QQM@email.msn.com>
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22874] Re: Any body built any of the Vectronics kits??
Message-ID: <Pine.SOL.3.91.981022092456.5124A-100000@zia>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, GREGORY HEATH wrote:

> Hi, I was cruising thru the TechAmerica catalog this morning and noticed
> that they make or sell Vectronics Cw transmitter kits and Amplifier kits and
> Receivers....anybody tried these??

> Are these the same kits that Ramsey sells that really dont EVER work.

No. Vectronics is the new kit business side of MFJ. Martin Jue of MFJ had a couple at HamCom in Dallas a few months ago we were looking at. They were well built (the Vectronic kits come as a board-kit, and an enclosure option) and seemed to be well designed. If anyone has built any of these new receiver and/or xmitter kits, let us know what you think of them. There is no actual transceiver kit yet, though :-(

Anyway, Vectronics is MFJ, not Ramsey.

72, Paul NA5N

Date: Thu, 22 Oct 1998 08:31:10 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: ROBERT EVANS <revans@sarnoff.com>
Cc: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [22875] Re: TAYLOE MIXER (Here it is!)
Message-ID: <Pine.BSI.3.96.981022082417.8324E-1000000@usr07.primenet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, ROBERT EVANS wrote:

> this is a comutating mixer.
> as the switches approach square-law the dynamic range approaches ideal.
>
>

Exactly right. I just realized that while sitting here and going through the morning's email.

I've done extensive work with commutative filters, and they work damned well if properly conditioned. I've made self-tracking types that can lock onto and filter out simple signals burried in 60dBv of noise. They were the precursor to switched-capacitor filters. One of the original commutative filters (AIEE Transactions, about 1950) was electro-mechanical!!

The Tayloe mixer can also be viewed as an oversampled sample-and-hold circuit, which is the mainstay of some of the new direct-conversion IC's.

My curiosity is arroused as to the possible transition and

[illegible]

Chris Trask / N7ZWY
Principal Engineer
ATG Design Services
P.O. Box 25240
Tempe, Arizona 85285-5240

Email: ctrask@primenet.com
<http://www.primenet.com/~ctrask>

Date: Thu, 22 Oct 1998 08:39:46 -0700 (PDT)
From: Monte Stark <ku7y@dri.edu>
To: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22876] Re: CQ WW DX CONTEST
Message-ID: <Pine.SOL.3.96.981022083614.19963B-100000@vortex>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

The SSB contest will be putting LOTS and LOTS of QRM on the "normal" QRP frequencies. Best to have a "plan B" ready instead of getting all bent out of shape!

And you could also plan to spend some good time with the family. Many of us are a little weak in this area

anyway!

Just a little heads up so you don't get taken by surprize
when the noise starts!

cul,

73, Ron, SOWP 5545M,

.....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....
....ku7y@sage.dri.edu.....Washoe Lake, Nevada....
....QRP-L #17...ARS #49...NorCal #330.....NRA LIFE.....

Date: Thu, 22 Oct 1998 08:39:55 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: "Michael A. Gipe" <mgipe@reliablemeters.com>
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22877] Re: Tayloe mixer
Message-ID: <Pine.BSI.3.96.981022083408.8324F-100000@usr07.primenet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, Michael A. Gipe wrote:

> Dan --
>
> The Tayloe Mixer looks like a dynamite innovation. Well done.
>
> A few comments/questions:
>
> It seems to me that good opposite sideband rejection would be very
> dependent on the match between the integrating capacitors (and series
> resistors, but those are easier to match). A 1% match gets you a
> little better than 40 dB, assuming that the switches track well and
> are pretty linear at the signal levels involved. Getting beyond that
> starts putting some pretty tight requirements on the match. However,
> once matched, it should be pretty much independent of frequency. Have
> you played with this? You also need good low-D caps.
>

Yes and no. Close matching of the capacitors is not essential
with commutative filters, although it certainly doesn't hurt. Low
dissipation certainly is, as well as low on-resistance (rds) of the
switching FET's. Another candidate for the switching is the open-
collector (or drain) 2-to-4 and 4-to-16 decoder chips in the 74XXX

```
>
> It also seems that a limiting factor at the low signal end would be
> charge injection in the FET switches. Keeping the integrating
> impedance low helps here (big caps, small Rs), but this puts more
> burden on the FET switch characteristics, requiring closer
> on-resistance tracking, and larger transistor structures which lead to
> more charge injection
>
>
> Yes, yes, yes.....
```

Could somebody please send me a copy of the Pacificon paper
where all of this started??

Circuit Design for the
RF Impaired

Chris Trask / N7ZWY
Principal Engineer
ATG Design Services
P.O. Box 25240
Tempe, Arizona 85285-5240

Email: ctrask@primenet.com
<http://www.primenet.com/~ctrask>

Graphics by Loek Frederiks

Date: Thu, 22 Oct 1998 11:42:38 -0400
From: Martin Squicciarini <MSquicciarini@McGettigan.com>
To: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>, "'ku7y@dri.edu'"
<ku7y@dri.edu>
Subject: [22878] RE: CQ WW DX CONTEST
Message-ID: <428B45F810F5D111A5D80001FA7E6AE360574E@NT_EXCH_SRV>
MIME-Version: 1.0
Content-Type: text/plain

Since it is a SSB contest the CW bands should be quiet but it is a great opportunity to work some DX on SSB. By Sunday all the big guns have worked everyone and are always looking for a few more Q's.

> -----
> From: Monte Stark[SMTP:ku7y@dri.edu]
> Reply To: ku7y@dri.edu
> Sent: Thursday, October 22, 1998 11:39 AM
> To: Low Power Amateur Radio Discussion
> Subject: Re: CQ WW DX CONTEST
>
> One little though....
>
> The SSB contest will be putting LOTS and LOTS of QRM
> on the "normal" QRP frequencies. Best to have a "plan B"
> ready instead of getting all bent out of shape!
>
> WARC bands should be good. Or work some SSB.
>
> And you could also plan to spend some good time with
> the family. Many of us are a little weak in this area
> anyway!
>
> Just a little heads up so you don't get taken by surprise
> when the noise starts!
>
> cul,
>
> 73, Ron, SOWP 5545M,
>
>KU7Y.....ARCI #8829.....Monte "Ron" Stark.....
>ku7y@sage.dri.edu.....Washoe Lake, Nevada....
>QRP-L #17...ARS #49...NorCal #330.....NRA LIFE.....
>

Date: Thu, 22 Oct 1998 08:44:42 -0700
From: "Michael A. Gipe" <mgipe@reliablemeters.com>
To: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [22879] Re: TAYLOE MIXER (Here it is!)
Message-ID: <044901bdfdd2\$e58bb620\$140a0a0a@double_trouble.reliablemeters.com>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

>On Thu, 22 Oct 1998, ROBERT EVANS wrote:

...

He did? Did I miss a message or was this sent off-list?

Please keep the discussion of Dan's mixer on the list, folks. This is what QRP-L is for! I'll gladly trade a hundred Clinton conspiracy posts for just one Tayloe Mixer message.

Date: Thu, 22 Oct 1998 11:46:49 -0400
From: Art Marshall <artm@t-com.com>
To: "'qrp-l@lehigh.edu'" <qrp-l@Lehigh.EDU>
Subject: [22880] FW: old article needed
Message-ID: <01BDFDB1.A8349920.artm@t-com.com>

I'll take a look I have all issues from 1926 thru 1975, most are hard bound upto 1972. By the way they are for sale ..

73 Art
w1fji

-----Original Message-----

From: L. B. Cebik [SMTP:cebik@utkux.utcc.utk.edu]
Sent: Thursday, October 22, 1998 7:57 AM

To: Low Power Amateur Radio Discussion
Subject: old article needed

Does anyone happen to have the October, 1937, QST, and be able to photocopy me an article on a "bent Yagi" by W1QP and W8CPC? Be glad to cover the cost of copying and postage.

-73-

LB, W4RNL

```
L. B. Cebik, W4RNL      /\  /\      *   /   /   /   (Off)(423) 974-7215
1434 High Mesa Drive   /  \/  \/ \   ----/\---- (Hm) (423) 938-6335
Knoxville, Tennessee /\   \   \ \   /   /  || /   (FAX)(423) 974-3509
37938-4443      USA    /  \   \   \ \       ||       cebik@utk.edu
  QRP/ARCI 2572  G-QRP 7203  CQC 125  NEQRP 347  NORCAL 1111  MIQRP 1432
  QCWA 13211   10-10 41159  FISTS 2600  NWQRP 401  scQRP 28  AK/QRP 343
  ARRL Life:  Tech. & Edu. Advisor  CW Ops QRP Club (VK) 476  ARS 411
                http://web.utk.edu/~cebik/radio.html
```

Date: Thu, 22 Oct 1998 08:57:26 -0700
From: Terry Conboy <terry.conboy@airtouch.com>
To: qrp-1@Lehigh.EDU
Subject: [22881] Re: LOOP VS ZEPP
Message-ID: <4.1.19981022084216.009e67a0@mailhost.tnc.airtouch.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 09:38 AM 10/22/98 -0400, KB7MBI wrote:

>WX permitting I was going put up a vertical 80M LOOP with the dimensions
>(approx) 20 ft on the sides and 120 ft horizontal wires and fed at mid bottom
>with open feed. Top wire will be up 50 ft. From the EXPERTS and those going
>thru trial and tribulations should I expect a significant improvement over the
>DOUBLE ZEPP (40M) up 55 ft)??

Alan,

I suspect you won't see much difference between the two antennas. I ran these through EZNEC and the gain of both is max straight up, with the loop having almost 1 dB more gain warming the clouds (about 7.8 dBi, good for local QSOs). At a 30 degree elevation angle, the signals broadside are within 0.1 dB (around 3.7 dBi) and at 90 degrees they are within 0.2 dB (both down about 7 dB from broadside).

This loop is more like a folded dipole, with the feed impedance around 160 ohms (with a large inductive component, since it is resonant lower than the 80m band). This should be no problem with open wire and a tuner.

As an alternative, if you're interested mainly in DX, you can feed it on one of the vertical 20 foot wires. This will null the straight up signals and give about 1 dB less gain at a 30 degree takeoff angle. However, at elevation angles below about 25 degrees, the vertically polarized signal will be much stronger (up to 6 dB) than the horizontally polarized signal from feeding in center of the bottom wire. Radiation off the ends is down about 12 dB. Radiation resistance drops to 15 to 20 ohms.

A good compromise is to feed it on the bottom wire about 25% from one end. This gives some signal straight up for local QSOs (down about 4 dB from max), but the signals at low angles are very close to the side feed arrangement. A bonus is that the antenna feedpoint will be around 50 ohms, if you should want to feed with coax.

Let us know how it works out.

72, Terry

Date: Thu, 22 Oct 1998 09:07:01 -0700
From: "Michael A. Gipe" <mgipe@reliablemeters.com>
To: "Chris Trask" <ctrask@primenet.com>
Cc: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [22882] Re: Tayloe mixer
Message-ID: <046601bdfdd6\$03668140\$140a0a0a@double_trouble.reliablemeters.com>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Chris, et al --

>> It seems to me that good opposite sideband rejection would be very
>> dependent on the match between the integrating capacitors ...
>> ... You also need good low-D caps.

> Yes and no. Close matching of the capacitors is not essential
> with commutative filters, although it certainly doesn't hurt. Low
> dissipation certainly is, as well as low on-resistance (rds) of the

>switching FET's.

It seems to me that one place where Dan's mixer departs from a straightforward commutating filter is that fact that he intentionally introduces a series R to force the circuit to have a conversion gain which falls off away from the LO frequency. (I wonder what this does to the harmonic responses?) Doesn't this make the capacitance value match more critical, since this rolloff must track on all four channels to keep the I and Q channel gains closely balanced at modulation frequencies of interest? Or is there something that I am missing?

Is it more correct to refer to a commutating filter/mixer's conversion gain as correlation gain, convolution gain, or processing gain?

Another candidate for the switching is the open-
>collector (or drain) 2-to-4 and 4-to-16 decoder chips in the 74XXX
>series. The commutative filters DO work better if the switching
device
>is between ground and the capacitor. Please don't ask me why, it's
>just something that I noticed through experimentation.

The ground switched form would make the switch on-resistance nearly independent of the instantaneous signal voltage, whereas the other way around the on-resistance would be affected by the signal. This would introduce non-linearity to the conversion gain.

I wonder what extending the mixer to more than four switches would accomplish? Could the phases in between 90 degrees be put to use somehow?

Mike K1MG

Date: Thu, 22 Oct 1998 09:10:36 -0700
From: "Michael A. Gipe" <mgipe@reliablemeters.com>
To: <MSquicciarini@McGettigan.com>, "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [22883] Re: CQ WW DX CONTEST
Message-ID: <048001bdfdd6\$86962f20\$140a0a0a@double_trouble.reliablemeters.com>
MIME-Version: 1.0

Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Martin wrote:

>Since it is a SSB contest the CW bands should be ..

We are likely to see lots of SSB activity extending down into the QRP
CW frequencies where other regions of the world have SSB allocations
in that area -- 40 meters for example.

Mike K1MG

Date: Thu, 22 Oct 1998 09:21:11 -0700
From: ki6ds@dpol.k12.ca.us (Hendricks, Doug)
To: <qrp-1@lehigh.edu>
Subject: [22884] More Tayloe Mixer Info
Message-ID: <01bdfdd7\$fbe7a460\$630a0d0a@doug.dpol.k12.ca.us>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Guys a little more information about the Tayloe mixer. First of all the
patent has been applied for. Second, Dan has agreed to write an article for
QRPP, but it will take him some time to do so. The target date is for the
Spring issue, which will give him time to try a few things and make some
improvements. There was no paper in the Pacificon QRP Compendium on the
Tayloe mixer. It has not been written yet.

All of this excitement is wonderful to see. And people say that ham radio
is a dying hobby! Not from my viewpoint.

The bottom line is that Dan is working on his article, it will appear in
QRPP as soon as it is ready, and we are having fun. See what you missed at
Pacificon!! 72, Doug, KI6DS

Date: Wed, 21 Oct 1998 17:31:13 -0500
From: "James A. Carmody" <carmodyjim@earthlink.net>
To: tdxs-list <tdxs-list@n5uh.tech.uh.edu>, qrp-l qrp-l <qrp-l@lehigh.edu>
Subject: [22885] IT/, HB9/ and DL/ ops
Message-ID: <362E60B0.A5D3AC64@earthlink.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Please give me a shout and put me on the cluster if you hear the mighty
9 watts starting this coming Monday afternoon CST. 20 mtrs SSB @ 14.260
and around 14.170. Some CW around 14.040 and some 15 mtr SSB.

73, Jim/nn5o

Date: Thu, 22 Oct 1998 09:26:29 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: "Michael A. Gipe" <mgipe@reliablemeters.com>
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [22886] Re: Tayloe mixer
Message-ID: <Pine.BSI.3.96.981022092206.11429B-1000000@usr07.primenet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, Michael A. Gipe wrote:

>
> > Yes and no. Close matching of the capacitors is not essential
> >with commutative filters, although it certainly doesn't hurt. Low
> >dissipation certainly is, as well as low on-resistance (rds) of the
> >switching FET's.
>
> It seems to me that one place where Dan's mixer departs from a
> straightforward commutating filter is that fact that he intentionally
> introduces a series R to force the circuit to have a conversion gain
> which falls off away from the LO frequency. (I wonder what this does
> to the harmonic responses?) Doesn't this make the capacitance value
> match more critical, since this rolloff must track on all four
> channels to keep the I and Q channel gains closely balanced at

Date: Thu, 22 Oct 1998 09:24:34 -0700
From: art.silvers@pop3.kaiperm.org (Art Silvers)
To: g3ycc@g3ycc.prestel.co.uk
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22887] Re: FAQ: Best backpacker antenna
Message-ID: <362F5C42.EC7F28F2@POP3.kaiperm.org>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Frank,

I like the SLV as it makes for a fb walking staff when collapsed and sets up in no time at all. Also, performs well from high ridges above the tree line where it would be difficult, if not impossible, to put up a dipole. Vern Wright's (W6MMA) mods also add a great deal of versatility and convenience to the basic idea.

72,

Arth W6AGS

Date: Thu, 22 Oct 1998 11:35:20 -0500
From: W5TB <w5tb@SoftHome.net>
To: pharden@aoc.nrao.edu, "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [22888] Re: Any body built any of the Vectronics kits??
Message-ID: <v0401170cb2550ef104df@[10.4.199.237]>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

If anyone has built
>any of these new receiver and/or xmitter kits, let us know what you
>think of them. There is no actual transceiver kit yet, though :-(
>
>Anyways, Vectronics is MFJ, not Ramsey.

Yes, please do let us know what you think!

Vectronics web site for those intrested
<http://www.hamsupplies.com/vect/kits.htm>

73 T.E. 'Doc' Drake W5TB

Arlington, TX w5tb@softhome.net http://www.qsl.net/w5tb/
QRP-ARCI # 3252 NORCAL ZOMBIE #1002 QRP-L #673 FISTS # 5365

Date: Thu, 22 Oct 1998 12:54:03 -0400
From: "Ken & Linda Burrough" <ne0c@1st.net>
To: "QRP-L" <qrp-l@Lehigh.EDU>
Subject: [22889] Vectronics QRP Kits
Message-ID: <000501bdfddc\$969c4ca0\$d206f0d1@ne0c.1st.net>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Hi Gang

All Vectronics kits are on the MFJ web page. Bring up
www.mfjenterprises.com then click on the flashing green Vectronics Logo.

I down loaded some of their manuals using Acrobat Reader 3.02.

Have Fun.

Ken/ne0c
Flushing, Ohio

Date: Thu, 22 Oct 1998 11:56:41 -0500
From: Dave Hassell <deh@tadpole.com>
To: w5tb@SoftHome.net, "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [22890] Re: Any body built any of the Vectronics kits??
Message-ID: <3.0.1.32.19981022115641.006b6854@mailhost.tadpole.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Has anyone built any of the vectronics cw filter kits? Pros and cons?

dave, AB5WX

At 11:35 AM 10/22/1998 -0500, W5TB wrote:

> If anyone has built

>>any of these new receiver and/or xmitter kits, let us know what you

>>think of them. There is no actual transceiver kit yet, though :-(
>>
>>Anyway, Vectronics is MFJ, not Ramsey.
>
>Yes, please do let us know what you think!
>
>Vectronics web site for those intrested
><http://www.hamsupplies.com/vect/kits.htm>
>
>
>73 T.E. 'Doc' Drake W5TB
>
>Arlington, TX w5tb@softhome.net <http://www.qsl.net/w5tb/>
>QRP-1 # 3252 NORCAL ZOMBIE #1002 QRP-L #673 FISTS # 5365
>
>
>

Date: Thu, 22 Oct 1998 12:08:06 -0500
From: Brad Bradfield <b_bradfield@yahoo.com>
To: Arjen.Raateland@vyh.fi, qrp-1@lehigh.edu
Subject: [22891] Re: Voice-Balancing Audio Clipper?
Message-ID: <362F6675.A9805034@yahoo.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

It's not that the human voice has a DC component, just that it is
assymetrical. In the AM broadcast business we've used assymetrical
modulation for years, with the FCC regs allowing 125% positive and 100%
negative modulation peaks. Many years ago, this limit didn't exist and
many stations used what was called super-modulation, with many stations
modulating to 200% or more on positive peaks, if they had the modulator
to handle that.

72's es 73's,

Brad, WB0CGH

qrp-1 # 377
ars # 72

Date: Thu, 22 Oct 1998 11:12:02 -0600 (MDT)
From: Paul Harden <pharden@aoc.nrao.edu>
To: Chris Trask <ctrask@primenet.com>
Cc: Daniel Tayloe <tayloe_d@juno.com>, Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [22892] Re: TAYLOE MIXER (Here it is!)
Message-ID: <Pine.SOL.3.91.981022104416.12038B-100000@zia>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, Chris Trask wrote:

> I just gave a paper at RF Design 98 this last Tuesday about my
> feedback mixer, which now has a patent pending. I'm getting up to
> a 40dBm IP3 with these with 0dBm of LO power and 20mA of 12V DC power.

Chris,

Your feedback mixer sounds interesting as well, which I assume is also based on a similar commutative principal. Is the feedback for bandwidth limiting, providing quadrature, or keeping the thing out of compression? Can you share with us a simple conceptual schematic/description like Dan did for his? It sure helps in following the discussion, and of course the opportunity for many of us to learn new things.

Tnx, Paul NA5N

Date: Thu, 22 Oct 1998 10:18:34 -0700
From: ki6ds@dpol.k12.ca.us (Hendricks, Doug)
To: <qrp-1@lehigh.edu>
Subject: [22893] Pacificon Speakers for Next Year (1999)
Message-ID: <01bdfde0\$00087da0\$630a0d0a@doug.dpol.k12.ca.us>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Just thought you might be interested in this list of speakers for next year

that have been confirmed. We will have a total of 8 speakers, but will hold off a while on that one. Another thing that we are thinking of doing is having a room for an open house on Friday night after the Fuddrucker's meal. The plan is to have a room where everyone can go to visit and pull their rigs out of their pockets and show the guys. But NO planned activities of any kind. This will provide 4 or 5 hours to visit and meet the people. Paul Harden came up with this idea and I think it is a great one. (Might have something to do with the fact that we had 30 or 40 people in our room most of the night Friday night, and I'm talking til 2 AM.) We will have the building contest on Saturday night as always.

Jim Kortge (the 2N2222 Transceiver Guy)
Dick Pascoe (QRP Hall of Famer and Kanga Guy)
Jim Duffy (QRP-L Antenna Guy & Dr. Megacycle)
Mike Gipe (NorCal Technical guy, consultant on many NorCal Kits, Blue Sky Engineering, etc.)
Dan Tayloe (Tayloe mixer and Scorpion Stinger Guy).

Anyone want to come??? The dates I believe are Oct. 15, 16, & 17th, but don't have a calender with me. 72, Doug, KI6DS

Date: Thu, 22 Oct 1998 11:20:21 -0600
From: "Marshall Emm" <mgemm@mtechnologies.com>
To: qrp-l@Lehigh.EDU, cqclist@mtechnologies.com
Subject: [22894] New Product: Hi-Mound BK-200 Bug
Message-ID: <199810221718.LAA16200@edison.chisp.net>
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Content-Transfer-Encoding: 7BIT

The new Hi-Mound BK-200 semi-automatic key (bug) has arrived!

Hi-Mound's first new product in many years, the BK-200 is a classic mechanical bug, with a twist-- two features make it unique:

There are no dot contacts to adjust! The BK-200 uses what Hi-Mound calls "magnetic driving" to generate dots. There is a magnetic switch assembly at the end of the bug, actuated by a small magnet on the pendulum arm. The result is a longer pendulum with very smooth operation, and virtually no need to adjust anything but the pendulum weight position when you change speeds!

The speed range is huge! Add the supplied accessory weight and

you can slow this puppy down to 12 WPM! And without adjusting anything else! Most bugs can't be slowed down below around 22 WPM without adding additional weight, and any speed change requires adjustment of contact spacing and dwell. This is the way a bug ought to work! Compare to the GHD optical bug and note that the BK-200 does not require external power.

As a result, the action is very smooth and the bug is a wonder to operate. The BK-200 weighs in at a whopping 5 Lbs, with its heavy black-painted steel base. Made to last a lifetime, this bug is a real attention-getter and a great investment. A cable with 1/4" phone plug for connection to your rig is included.

The BK-200 is \$269.95 plus s/h (\$15 for FedEx 2nd Day Air).

You'll find a picture of the BK-200 at <http://www.MorseX.com/himound> , or if you don't have access to the web I can e-mail you one as a .jpg attachment. Use our secure ordering facilities on the web site, or call (800)238-8205 toll free to order by phone, or (303) 752-3382 for more information.

73
Marshall Emm
N1FN/VK5FN
n1fn@MorseX.com
Morse Express
"Everything for the Morse Enthusiast"
<http://www.MorseX.com>
(303)752-3382
--

Date: Thu, 22 Oct 1998 10:33:05 -0700
From: Dan Tayloe-P26412 <Dan_Tayloe-P26412@email.mot.com>
To: ctrask@primenet.com, qrp1 <qrp-1@Lehigh.EDU>
Subject: [22895] Re: TAYLOE MIXER (Here it is!)
Message-ID: <362F6C51.EAF1B58E@email.mot.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

>My curiosity is aroused as to the possible transition and
>stopband improvements that can be obtained by using the 2-section
>commutative filter with feedback. I've yet to find any definitive

>literature on that circuit, but I've never let that stop me in the
>past.

My first attempt at this receiver used both halves of the *dual*
1 of 4 mux, the TI 74CBT3253. The first half I connected as a
commutating filter feeding the second half, which was the TAYLOE
productor detector.

The problem? My third order intercept dropped from +30 (using
just the detector), to +19 dbm. I quickly reconfigured things
when I saw that!

One other little note: The detector is biased on the input side
to +2.2v. After all, the device is not good for signal less than
0v. One of the things I tried was to also bias the ground side of
the detector caps to 2.2v, with good AC bypass to ground. I was
doing this to get rid of any leakage current the caps might have
through the switch that might contribute to noise.

It made no difference with my current 4.5 nv/Hz preamp op-amps.
If I get some better devices (0.9 nv/Hz is the best right now), it
might make a difference. I expect with better op-amps to improve
on the -136 MDS as well, but that would be great overkill on 40m.

- Dan Tayloe, N7VE

Date: Thu, 22 Oct 1998 17:34:00 +0000
From: Ed Loranger <we6w@qsl.net>
To: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [22896] Resonant Speakers and Acoustics.
Message-ID: <362F6C88.301E@qsl.net>
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Well Good Day fellow QRP Aficianados!

I've been very busy playing with the resonant speaker
system. Yes, it is a "System" now. Yesterday I discovered
Acoustic engineering Web sites that have peaked my interest.
(Get it? "Peaked" my interest :)

They are:
Closely dealing with PVC tubes:

<http://www.gmi.edu/~drussell/GMI-Acoustics/Filters.html>

Dealing with Speaker Resonance and Anti-resonance
ported and sealed chambers:

<http://www.jlaudio.com/tutorials/magic/ported.html>

I had forgotten how interested I was in these topics many years ago. I had researched and designed a acoustic exhaust pipe for my CB550E motorcycle engine that used acoustics to create a timed backwave reaching into the combustion chamber when both valves were open during overlap, the wave reversed at the inlet port providing a passive supercharging effect. It worked quite nicely. Although not measured on a Brake machine, I did impress a Kawasaki 900 when he later caught up with me....

Ahhh the pleasures of youth.

I hope you all enjoy the acoustic lectures contained in the web sites above. I will continue to work on this and may not have too much time for returning email questions.

One Item of concern is small speaker efficiency at reproducing the high frequency components of QRN. The small speaker seems to enjoy sharing this noise with me....

OH! Someone mentioned larger speakers etc. Well, one item of concern is pipe size. larger pipes above 5 inches will begin to allow non planar audio waves at the design frequency to enter the chamber. The modes are similar to waveguides at RF. Controlling these modes increases complexity, so the physical diameter limitations do exist, unless you wish to address them with more complex design, I recommed using the smaller piping.

Well, this is probably my last post on speakers for a while. I'll let y'all know what I come up with. I do see that many of you are building these now and they work quite nicely even in the most simplest of designs, i.e. 1/4 wave with reflector at the end, or 1/2 wave open-ended pipe.

Just remember that the open-ended pipe should be slightly shorter than proven mathematically due to residual end effects. I found it easier to allow the speaker to slide in/out to adjust tone.

So I'll hold back comments until I've got something to "Speak" about. <Resonating laughter heard in background>
Ha, ha ha!

Tubular, Dude!

--

72, Ed WE6W (CW only/VP-0); <http://www.qsl.net/we6w> Santa Rosa, CA
QRP-Z#106 QRP-L#1068 AR#112 NC#2227 ARCI#9397 QAA#006

Date: Thu, 22 Oct 1998 10:45:28 -0700
From: "Michael A. Gipe" <mgipe@reliablemeters.com>
To: "Chris Trask" <ctrask@primenet.com>
Cc: "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [22897] Re: Tayloe mixer
Message-ID: <04c501bdfde3\$c462e160\$140a0a0a@double_trouble.reliablemeters.com>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Chris --

>> Doesn't this make the capacitance value
>> match more critical, since this rolloff must track on all four
>> channels to keep the I and Q channel gains closely balanced at
>> modulation frequencies of interest? Or is there something that I
am
>> missing?
>>
> Bzzzzzt!! The resistor is part of the commutative filter. In
> such a circuit, the centre frequency is determined by the clock rate
and
> the number of capacitors (ie - $F_0 = F_c/N$). The bandwidth is the RC
> time constant of the resistor and the individual commutating
capacitors.
> In modern switched-capacitor filters, the resistor is actually a
parasitic
> that degrades performance.

Great stuff! I'm learning more about commutating filters at the same
time. But help me understand what I'm missing here. Suppose your
capacitors are numbered 1 through 4. If capacitor 2 has a value 1%
less than capacitor 1, the pole of channel 2 will be 1% higher in
frequency than that of channel 1. For a given modulation frequency,
 m , the recovered voltage (conversion gain) from channel 2 will be
different from channel 1 (ignore the differences due to phase for the

moment) because of the inherent roll-off. When the I and Q are combined, wouldn't this affect the opposite sideband rejection? Set me straight.

>>
>> I wonder what extending the mixer to more than four switches would
>> accomplish? Could the phases in between 90 degrees be put to use
>> somehow?
>>
> It will remove the image further from baseband.

I'm not sure I understand this. What image?

I see two main ways of extending the length.

1. Extend the filter/mixer length but use the same LO, such that every four taps have the same LO drive. The capacitor voltages are summed by alternately adding and subtracting every other capacitor. The result is one I channel and one Q channel. No advantage here except to average out errors.
2. Drive n caps, each with an on-angle of $2\pi/n$. How would you combine the outputs to get some useful advantage?

I'm shooting from the hip here without taking time to analyze things, so please forgive me if some of the questions are ridiculous. Lots to learn!

Mike K1MG

Date: Thu, 22 Oct 1998 10:47:43 -0700
From: Grant Taylor <k7gt@qsl.net>
To: qrp-l@lehigh.edu
Subject: [22898] Vernier dials, SSTs, Pacificon, etc
Message-ID: <362F6FBF.2AE9@qsl.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Have two vernier dials coming (tnx K6AEC)

Have a SST/20m kit coming (tnx K0EVZ)

Someone asked who won the K2: Terry Conboy, N6RY (he lives even closer to Pacificon than I do...i.e., a local won it!)

The K2 is slick. I especially like the display changing to code speed when the speed knob is twisted, returns to freq display... signs of a interface / ergonomics type in the project (!)

Didn't see the 44 Magnum, but the crowds were fierce in the open house.

--

Grant K7GT Pleasanton CA k7gt@qsl.net <http://www.qsl.net/k7gt>

Date: Thu, 22 Oct 1998 10:48:14 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: Paul Harden <pharden@aoc.nrao.edu>
Cc: Daniel Tayloe <tayloe_d@juno.com>, Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Subject: [22899] Re: TAYLOE MIXER (Here it is!)
Message-ID: <Pine.BSI.3.96.981022104504.22172B-100000@usr04.primenet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, Paul Harden wrote:

>
>
> On Thu, 22 Oct 1998, Chris Trask wrote:
> > I just gave a paper at RF Design 98 this last Tuesday about my
> > feedback mixer, which now has a patent pending. I'm getting up to
> > a 40dBm IP3 with these with 0dBm of LO power and 20mA of 12V DC power.
>
> Chris,
> Your feedback mixer sounds interesting as well, which I assume is also
> based on a similar commutative principal.
>
 No, my feedback mixer has absolutely nothing to do with any
commutative principles.

>
> Is the feedback for bandwidth limiting, providing quadrature, or keeping
> the thing out of compression?
>
 Intermodulation distortion.

>
> Can you share with us a simple conceptual schematic/description like Dan
> did for his? It sure helps in following the discussion, and of course
> the opportunity for many of us to learn new things.
>

The original article is in the September 1997 issue of RF Design,
pages. It's been mentioned numerous times on this mail list.

```

      /-----\
     /  What's all this  \
    / extinct stuff, anyhow? \
   /-----\
  _ | /
oo\
(--) \
     \  . ' .
     \  ' '
     \  "
     \  ( )
     \  '-| )__| :. \
     \  | | | | \
     \  c__; c__; ' -.. '> .__

```

Circuit Design for the
RF Impaired

Chris Trask / N7ZWY
Principal Engineer
ATG Design Services
P.O. Box 25240
Tempe, Arizona 85285-5240

Technical Editor,
QRP Quarterly
QRP ARCI 9464

Email: ctrask@primenet.com
<http://www.primenet.com/~ctrask>

Graphics by Loek Frederiks

Date: Thu, 22 Oct 1998 13:51:01 -0400
From: Thomas Jennings <jennings@eng14.rochny.uspra.abb.com>
To: qrp-l <qrp-l@lehigh.edu>, prvalko@oakland.edu
Subject: [22900] FOX: Fox log for Oct 21, 1998 kv2x Fox
Message-ID: <362F7085.2EE7F46D@eng14.rochny.uspra.abb.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

i Hounds!

Finally have my log completed!!!

First of all please accept my apology for not properly announcing myself

the day before. I will do it correctly the next time. My station consisted of an IC706 at 5 watts and the antenna was a 40 meter quater wave vert with 8 35 ft radials and an 8 foot ground rod.

I want to thank all who tried to get me and I am sorry I couldn't get you all. I hope all the info in the log is correct.

Working a pile up was much more difficult than I expectd. The response was a lot better than I thought it would be on account of the geomagnetic storm but looks like it didn't hinder the signals too much. The pile up consisted of a bunch of weak sigs mixed together and most of the time it was difficult to dig out a call. It was fun but difficult.

There must be a very good propagation duct to Texas! Great turn out guys!

I hope everybody is ok in the callbooks as I will make a special QSL and send them out to all I worked.

Thanks again and good luck to all.

Tom, kv2x

	TIME GMT	STATION WORKED	FOX RST	HOUND RST	HOUND QTH	HOUND NAME	HOUND QRP-L#	HOUND POWER
1	0204	w0ch	559	559	mo	Dave	618	
2	0206	k5aar	559	559	ok	DON	1512	
3	0211	ke6zx	559	549	fl	Fred	1728	
4	0212	w5tfb	559	559	tx	Jack	282	
5	0213	af5z	559	449	tx	Bob	984	
6	0214	n5tw	559	599	tx	Tom	1474	
7	0215	nu4n	559	559	ky	Dave	1196	
8	0220	w5hns	559	449	tx	Henry	17	
9	0223	k0pte	559	559	mo	Wayne	1058	
10	0224	w4jpk	559	559	ga		1095	
11	0227	w0rw	559	579	co	Paul	1284	
12	0236	kb0pte	599	559	mo	wayne	1058	<----DUP
13	0236	ve2kn	559	559	que	Jim	104	
14	0242	ve5rc	559	229	sk	Bruce	886	
15	0248	n1tp	559	559	fl	Tom	1317	
16	0252	ns4l	559	569	al	Randy	468	
17	0258	ai4cw	559	459	al	Don	1670	3w
18	0304	w5tbt	559	559	tx	Doc	673	
19	0306	w5hns	559	549	tx	Henry	178	

20	0310	n4xdw	559	559	al	Jay	1372	
21	0313	k5zt7	559	329	tx	Bill		5w
22	0316	w5jay	559	559	ar	Jay	1201	
23	0317	w5sb	559	549	tx	Bill	1279	
24	0321	k5zty	559	339	tx	Bill	473	
25	0323	n1qqv	559	579	ct	Ed	400	
26	0325	kc1fb	559	559	ct	Jim	291	
27	0328	kf2ph	599	559	ny	Nick	13	
28	0331	n5lb	559	559	tx	Dan		5w
29	0332	k8cv	559	559	mi	Walt	935	
30	0333	wh8d	559	559	mi	Mike		5w
31	0336	n2ly	559	579	nj	Bob	1719	
32	0338	nq7y	559	559	fl			
33	0342	n2zhy	559	559	nj	David		2w
34	0343	n2cq	559	569	nj	Ken		5w
35	0345	k1mg	559	229	ca	Mike		5w
36	0348	ak7y	559	559	az		1693	
37	0353	n1fn	559	559	co	Marshal	153	
38	0355	w2ux	559	559	sc	Gary	593	
39	0357	n4roa	559	559	va	Dan	970	
40	0358	k0evz	559	559	mn	Doc	861	
41	0359	ku7y	559	559	nv	Ron	17	

Date: Thu, 22 Oct 1998 11:03:24 -0700 (PDT)
 From: KC5TJA <kc5tja@topaz.axisinternet.com>
 To: Paul Harden <pharden@aoc.nrao.edu>
 Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
 Subject: [22901] Re: TAYLOE MIXER (Here it is!)
 Message-ID: <Pine.LNX.3.96.981022110246.8502D-1000000@amethyst.axisinternet.com>
 MIME-Version: 1.0
 Content-Type: TEXT/PLAIN; charset=US-ASCII

On Wed, 21 Oct 1998, Paul Harden wrote:

> I am getting a gob of private email wanting to know where the original
 > post is on Dan Tayloe's new product detector design. I guess many of
 > you missed it, as you weren't reading the PacifiCon reports (shame on
 > you!). Dan can't get to his original file until tomorrow, so I am
 > reposting it to the group with his permission to save time.

Also please note that the original message can be found in the QRP-L
 archives! When in doubt, NEVER FORGET THE ARCHIVES! That's what it's
 there for! *grin*

=====

KC5TJA/6		- TEAM DOLPHIN -
DM13		Samuel A. Falvo II
QRP-L #1447		http://www.dolphin.openprojects.net
Oceanside, CA		

Date: Thu, 22 Oct 1998 11:14:50 -0700
From: Grant Taylor <k7gt@qsl.net>
To: qrp-l@lehigh.edu
Subject: [22902] Wanted: Sep 1997 issue of RF Design
Message-ID: <362F761A.5304@qsl.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

My magazine collection doesn't extend into professional journals. Could someone help me find (and copy) an article by D. Tayloe in the Sept 1997 issue of RF Design.

!!

--

Grant K7GT Pleasanton CA k7gt@qsl.net <http://www.qsl.net/k7gt>

Date: Thu, 22 Oct 1998 11:23:37 -0700
From: "Michael A. Gipe" <mgipe@reliablemeters.com>
To: <ctrask@primenet.com>, "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [22903] Re: Tayloe Mixer and Trask Feedback Mixer
Message-ID: <050001bdfde9\$1933e2c0\$140a0a0a@double_trouble.reliablemeters.com>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Gang -

Chris Trask's innovative mixer is also an important advance. In fact, I would be very surprised if we didn't see a lot of the future communications ICs incorporating it. Will you remember us when you are rich and famous, Chris?

If I understand it correctly, Chris extended the basic Gilbert cell with negative feedback to improve the linearity (if you can call a mixer linear!). Of course, this is a vastly oversimplified description.

The bottom line is this: The Gilbert cell is very inexpensive and well suited to monolithic implementation; therefore it has achieved widespread use in ICs like the NE602. However, it suffers from some serious problems which Chris has taken care of in his development.

With Chris's design, maybe we will someday see a third generation NE602-like part which is actually usable in the front end of a receiver -- and doesn't draw 2 amps!

Mike K1MG

Date: Thu, 22 Oct 1998 11:26:34 -0700 (PDT)
From: KC5TJA <kc5tja@topaz.axisinternet.com>
To: Chris Trask <ctrask@primenet.com>
Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22904] Re: Tayloe mixer
Message-ID: <Pine.LNX.3.96.981022112614.8502E-100000@amethyst.axisinternet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, Chris Trask wrote:

> Could somebody please send me a copy of the Pacificon paper
> where all of this started??

I'd like a copy too. Is there a compressed postscript file available somewhere?

=====
KC5TJA/6 | -| TEAM DOLPHIN |-
DM13 | Samuel A. Falvo II
QRP-L #1447 | <http://www.dolphin.openprojects.net>
Oceanside, CA |

Date: Thu, 22 Oct 1998 11:29:12 -0700 (PDT)
From: KC5TJA <kc5tja@topaz.axisinternet.com>
To: "Hendricks, Doug" <ki6ds@dpol.k12.ca.us>
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [22905] Re: More Tayloe Mixer Info
Message-ID: <Pine.LNX.3.96.981022112853.8502F-1000000@amethyst.axisinternet.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Thu, 22 Oct 1998, Hendricks, Doug wrote:

> Guys a little more information about the Tayloe mixer. First of all the
> patent has been applied for. Second, Dan has agreed to write an article for
> QRPp, but it will take him some time to do so. The target date is for the

Any chance of seeing this cross-published in QQ as well?

```
=====
      KC5TJA/6      |      -| TEAM DOLPHIN |-
      DM13          |      Samuel A. Falvo II
      QRP-L #1447   |      http://www.dolphin.openprojects.net
      Oceanside, CA |.....
```

Date: Thu, 22 Oct 1998 11:34:58 -0700
From: "Michael A. Gipe" <mgipe@reliablemeters.com>
To: <k7gt@qsl.net>, "Low Power Amateur Radio Discussion" <qrp-l@lehigh.edu>
Subject: [22906] Re: Wanted: Sep 1997 issue of RF Design
Message-ID: <051e01bdfdea\$af044870\$140a0a0a@double_trouble.reliablemeters.com>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Ouch! You sure know how to hurt a guy. That's the excellent article by Chris Trask, not D. Tayloe. I should have a copy of the article around here. However, I filed it properly so it may be a little hard to find. (I should never file things -- it the best way to lose them).

Mike K1MG

> Could
> someone help me find (and copy) an article by D. Tayloe in the Sept
1997
> issue of RF Design.
> Grant K7GT

Date: Thu, 22 Oct 1998 14:31:59 -0400
From: "Edward A Kwik jr" <eakwikjr@hti.com>
To: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22907] FOX: Fox log for Oct 21, 1998 kv2x Fox
Message-ID: <362F7A1F.9682E27D@hti.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Thomas Jennings wrote:

> 29 0332 k8cv 559 559 mi Walt 935
> 30 0333 wh8d 559 559 mi Mike 5w I was there
for the the one minute opening to Michigan but these guys beat me to the punch.
0332 to 0333 was the only time the fox was above 119 for me. Great job guys.
Lots of patience and good timing.

Ed Kwik AB8DF Waterford, MI qrp-l# 1444

Date: Thu, 22 Oct 1998 15:00:10 -0400
From: elawson@lr.net (Ed Lawson)
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [22908] 44 Magnum
Message-ID: <19981022185226.AAA25611@office4.office.new>
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Does anyone know when and where the 44 Magnum will be available?
I understand this will be an improved 38 Special. I am looking for
a small, very small rig for hiking and thought this might become the
rig to buy/make for that purpose.

Also, does anyone know a source for mods to the Ramsey
one watt kits. Especially combining the receiver kits with them.

TIA

Ed Lawson
elawson@lr.net
K1VP

Date: Thu, 22 Oct 1998 11:58:48 -0700
From: Bob Painter <turnkey@exo.com>
To: qrp-1@Lehigh.EDU
Subject: [22909] Wanted: Bencher and Keyer
Message-ID: <199810221856.LAA31395@ns1.snni.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hi Gang,
Just got back from Pacificon and got to see and try a paddle for the
first time. (This was after the code sending contest). By the way, it
was great to meet and see so many of you there.

Interested in a Bencher iambic paddle and ideally a Morse Machine MM3
keyer. If you have one or the other that you might want to part with, please
email me direct. Will go with another keyer if no MM3's are available.
Thanks
73 Bob, KF6NKH

Date: 22 Oct 1998 14:56:31 -0400
From: Glen Leinweber <leinwebe@mcmail.cis.mcmaster.ca>
To: qrp-1;;
Subject: [22910] Re: Tayloe mixer
Message-ID: <1998Oct22.145631-0400@[130.113.234.7]>

Seems to me that Dan's innovation is in coaxing
a single mixer to give quadrature outputs suitable
for phasing-type sideband suppression.

The fact that he's using FET switches to
do commutating mixing isn't new. Terminating the

mixer into a low-pass filter isn't really new either.

Dan mentions that the mixer has a gain close to one. That is, the audio output is directly proportional to the RF input amplitude (commutated between the four output channels). So really, the output signal from the two "in-phase" (I) capacitors is one-half of the RF signal, and the output signal from the two "quadrature" (Q) capacitors is one-half of the RF amplitude as well. When you combine the I and Q signals (after 90 degree audio phase shift), THEN you get a gain of one. I think Dan's point was that this mixer has very little net signal LOSS.

I'd say that the 50 ohm antenna resistance (or its equivalent source resistance after filtering) should comprise ALL of the resistance in the charging path for the four capacitors. FET ON resistance would be the most significant signal loss. I think these mixers work best when impedances are kept low as possible.

What would the RF port see?....let me guess...
it'd see the reactance equivalent to ONE of the integrating capacitors AT THE AUDIO OUTPUT FREQUENCY.
Um, I'm not expert at commutation - is this right?
Glen VE3DNL leinwebe@mcmaster.ca

Date: Thu, 22 Oct 1998 15:16:41 -0400
From: John Mckee <JMckee@RFMD.com>
To: "'QRP-L'" <qrp-l@lehigh.edu>
Cc: "'QRP-L'" <qrp-l@lehigh.edu>
Subject: [22911] Log Periodic Dipole design?
Message-ID:
<c=US%a=_%p=RF_Micro_Devices%l=PACHACUTEC-981022191641Z-41683@proxy1.rfmd.com>
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Howdy Gang,

Has anyone ever designed and built a log periodic dipole antenna for the upper HF bands?

I have the ARRL antenna book. Are there other sources of information

available for constructing this type of antenna?

Thanks es 73

John WB4OFT
jmckee@rfmd.com

Date: Thu, 22 Oct 1998 16:36:43 -0700
From: "Doug Hauff" <slmachco@fix.net>
To: <cebik@utkux.utcc.utk.edu>
Cc: <qrp-1@Lehigh.EDU>
Subject: [22912] Re: old article needed
Message-ID: <199810221932.MAA05615@fletch.fix.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Hi L.B., Well I got it, going to printer's today anyway, will copy and forward to you;. 72 Doug Hauff KE6RIE

> From: L. B. Cebik <cebik@utkux.utcc.utk.edu>
> To: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
> Subject: old article needed
> Date: Thursday, October 22, 1998 4:57 AM
>
> Does anyone happen to have the October, 1937, QST, and be able to
> photocopy me an article on a "bent Yagi" by W1QP and W8CPC? Be glad to
> cover the cost of copying and postage.
>
> -73-
>
> LB, W4RNL
>
> L. B. Cebik, W4RNL /\ /\ * / / / (Off) (423)
974-7215
> 1434 High Mesa Drive / \/ \/ ----/\---- (Hm) (423)
938-6335
> Knoxville, Tennessee /\ \ \ \ / / || / (FAX) (423)
974-3509
> 37938-4443 USA / \ \ \ ||
cebik@utk.edu
> QRP/ARCI 2572 G-QRP 7203 CQC 125 NEQRP 347 NORCAL 1111 MIQRP 1432
> QCWA 13211 10-10 41159 FISTS 2600 NWQRP 401 scQRP 28 AK/QRP 343

> ARRL Life: Tech. & Edu. Advisor CW Ops QRP Club (VK) 476 ARS 411
> <http://web.utk.edu/~cebik/radio.html>
>
>
>

Date: Thu, 22 Oct 1998 15:39:55 -0400
From: "Fishman, Clark" <cfishman@pica.army.mil>
To: "'qrp-l@lehigh.edu'" <qrp-l@Lehigh.EDU>
Subject: [22913] Another Mixer
Message-ID: <53EB67411602D211846900A0C9C7647A058CF8@mail3.pica.army.mil>
MIME-Version: 1.0
Content-Type: text/plain

With all this grat talk about mixers, I thought I would throw this in. In about the last 3 or 4 months issues of Rad Com (the journal of the Radio Society of Great Britian) in the "Technical Topics" column there has been info on a mixer using a fairly new IC made by Fairchild Semiconductor..it is the FST3125 and is a CMOS quad bus switch.....the 4 switches were configured similar to the 4 diodes used in a diode double balanced mixer and the control signals were grouped in two pairs and fed 180 degrees out of phase from each other...

The results indicate a 3rd order intercept of +48 DBM....this is way good...

the chip is cheap...about \$1.60 each (I got 10 samples for free) and the driver circuitry uses a 74AC86 chip which is cheap...

another atvantage is unlike high level diode double balanced mixers...this guy only needs 5 volts of LO drive nad not +27DBm (that's a 1/2 whatt) of drive.

The chip needs some small transformers you can wind or buy made from MiniCircuits.

I am in the midst of building a prototype....

Clark Fishman WA2UNN cfishman@pica.army.mil

I will read all mail.....when I can get to it...out for a tuneup on my body

Date: Thu, 22 Oct 1998 15:13:45 -0500
From: "Freeberg, Scott (STP)" <scott.freeberg@guidant.com>
To: "'QRP-L'" <qrp-l@Lehigh.EDU>
Subject: [22914] Dentron 160 meter qrp long wire antenna tuner Question?
Message-ID: <21B46CBD022AD1118F0500805F15A068CA230C@STPMSX05.stp.guidant.com>
MIME-Version: 1.0
Content-Type: text/plain

Does anyone on the list have a Dentron 160 meter long wire antenna tuner? I don't have a manual for mine and have some questions. Maybe you or your manual have the answers. Please respond to me directly, off the list.

Thanks,

Scott WA9WFA in Saint Paul Minn
Norcal 809, ARCI#7299
OHR-100, Argonaut 509
scott.freeberg@guidant.com

Date: Thu, 22 Oct 1998 15:23:07 -0500
From: Dave Hassell <deh@tadpole.com>
To: "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [22915] Autek filter QF-1
Message-ID: <3.0.1.32.19981022152307.006c40f4@mailhost.tadpole.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Does anyone out there have a copy of the Autek QF-1 manual? Or a scanned version of the schematic?

dave

Date: Thu, 22 Oct 1998 16:42:56 -0400
From: "david r" <elbc@pivot.net>
To: <DDORN@swbell.net>, "Low Power Amateur Radio Discussion" <qrp-l@Lehigh.EDU>
Subject: [22916] Re: CQ WW DX CONTEST
Message-ID: <000c01bdfdfc\$8d9b6800\$4d3d62ce@elbc>
MIME-Version: 1.0
Content-Type: text/plain;

charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

-----Original Message-----

From: DONALD G. DORN <DDORN@swbell.net>
To: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Date: Thursday, October 22, 1998 8:26 AM
Subject: CQ WW DX CONTEST

>Hi Folks,
>The CQ WW DX CONTEST (SSB) is this coming weekend. I thought it might be
>fun to try playing with the big boys using QRP. The exchange calls for
>sig rpt and CQ zone number. Can somebody tell me what the zone number is
>for Eastern Oklahoma, or where I can find out?
>Thanks,
>
>Don K5AAR
>
Hi Don,
here's a list of CQ Zone on the Web <http://www.ac6v.com/paget.html>
you would be in zone 4
73 it's a great test have fun..
Kc1di qrp-1 975

Date: Thu, 22 Oct 1998 16:43:52 EDT
From: FrConrad@aol.com
To: qrp-1@lehigh.edu
Subject: [22917] NEED HELP WITH FT-707
Message-ID: <1a7ae34.362f9908@aol.com>
Mime-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit
Content-Transfer-Encoding: 7bit

To whomsoever has had experience with a Yeasu FT-707...

Several years ago I inherited a Yeasu FT-707 which I have used for a backup digital receiver while working QRP with my Argo 509 and homebrew QRP transmitters.

Recently I have wanted to use the thing mobile QRO and on SSB. Two problems

plague me. On CW the sidetone sounds nice and stable at low power output. But as I increase power, the sidetone sounds terrible--like it has an awful chirp. Is this normal? I don't have any sophisticated test equipment and I really am too embarrassed to try this out on the air. Also, on SSB with the mike gain turned almost all the way up I barely get one or two led's indication of output on the meter on voice peaks.

Finally, how does this "automatic" tuning work. Does it crank down the power output at high SWR or what? (Yes, I did get my general license by memorizing the answers to the questions...thank you very much!)

I'd like to correspond with someone who is familiar with this rig. The manual says, "Turn it on, turn the knobs" and little else. If you can help, please E-mail me direct, off the list.

Thanks,

John+
WB6MFS

Date: Thu, 22 Oct 1998 16:49:00 -0400
From: "david r" <elbc@pivot.net>
To: <deh@tadpole.com>, "Low Power Amateur Radio Discussion" <qrp-1@Lehigh.EDU>
Subject: [22918] Re: Autek filter QF-1
Message-ID: <005f01bdfdfd\$664cbbe0\$4d3d62ce@elbc>
MIME-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

-----Original Message-----

From: Dave Hassell <deh@tadpole.com>
To: Low Power Amateur Radio Discussion <qrp-1@lehigh.edu>
Date: Thursday, October 22, 1998 4:16 PM
Subject: Autek filter QF-1

>Does anyone out there have a copy of the Autek QF-1 manual? Or a scanned
>version of the schematic?

>
>dave
>
>

if anyone does I'd also like a copy
Dave KC1DI Qrp-1 975

Date: Thu, 22 Oct 1998 16:57:23 -0400 (EDT)
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
To: KC5TJA <kc5tja@topaz.axisinternet.com>
Cc: Low Power Amateur Radio Discussion <qrp-1@Lehigh.EDU>
Subject: [22919] Re: Help with understanding of L-networks
Message-ID: <Pine.GS0.3.96.981022164209.22872A-100000@moe.cas.utk.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Sam,

L-networks are quite straight forward. A couple of notes in Communications Quarterly (Summer, 1994 and Wnter, 1995) can help you get the hang of them. The following is for purely resistive values of impedance.

First, the series component always goes on the low impedance side and the shunt is across the high impedance side.

Second, the chief calculating tool is "delta" (sometimes called working Q). $\Delta = \sqrt{(R_h/R_l) - 1}$ where R_h = high impedance, R_l = low impedance. Once you know Delta, the rest is easy. an alternative way of writing this relationship is $(R_h/R_l) = \Delta^2 + 1$.

Third, $X_{series} = \Delta R_l$.

Fourth, $X_{shunt} = R_h/\Delta$.

Note that I have not specified either X_{series} or X_{shunt} as capacitive or inductive. Pick one and the other X is the other kind of reactance. Series C gets a shunt L and a series L gets a shunt C.

Convert the values of X according to the standard X_c to C and X_l to L formulas in the handbook.

If you have some reactance in the load, combine it with the calulated values of X, as determined by your decision on who is C and who is L. some values of load reactance are large enough to convert a calculated value of X_c into a value of X_l or a calculated value of X_l into a value of X_c . The reult will be a final circuit with either 2 Cs or 2Ls. This is

fine, as long as you know why each component is what it is.

There are more complex ways of figuring out the values, but this one works for all values of impedance.

Hope this helps simplify handling L-networks.

-73-

LB, W4RNL

```
L. B. Cebik, W4RNL      /\  /\      *   /   /   /   (Off) (423) 974-7215
1434 High Mesa Drive    /  \/  \/ \   ----/\---- (Hm) (423) 938-6335
Knoxville, Tennessee  /\   \   \ \   /   /  || /   (FAX) (423) 974-3509
37938-4443      USA     /  \   \   \ \       ||               cebik@utk.edu
  QRP/ARCI 2572  G-QRP 7203  CQC 125  NEQRP 347  NORCAL 1111  MIQRP 1432
  QCWA 13211   10-10 41159  FISTS 2600  NWQRP 401  scQRP 28  AK/QRP 343
  ARRL Life:  Tech. & Edu. Advisor  CW Ops QRP Club (VK) 476  ARS 411
                        http://web.utk.edu/~cebik/radio.html
```

Date: Thu, 22 Oct 1998 15:05:07 +0000
From: Bob Hightower <ki7mn@extremezone.com>
To: qrp-l@lehigh.edu, azqrp@extremezone.com
Subject: [22920] Dan Tayloe's Mixer
Message-ID: <199810222156.0AA09219@enterprise.extremezone.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Well, Dan created quite a stir with his mixer design, so, as a result of all the posts asking for a re-post of his info, he has allowed me to put it on my web page. You can get it by going to
<http://www.extremezone.com/~ki7mn/tayloe.htm>.
72,73
Bob Hightower KI7MN

<http://www.extremezone.com/~ki7mn>

Date: Thu, 22 Oct 1998 17:05:59 -0500
From: "Michael A. Newell" <wb4huc@texas.net>
To: micksky@hotmail.com

Cc: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22921] Re: Identifying IC and Transistors..
Message-ID: <362FAC47.766896CD@texas.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

One place that has information
and spec sheets on solid state
devices is

<http://www.questlink.com>

which is located here in Austin, TX.

Good Luck,

Mike Newell
WB4HUC
Austin, TX
<http://wb4huc.home.texas.net>
QRP-L # 1668

Date: Thu, 22 Oct 1998 18:35:21 -0400 (EDT)
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>
To: Doug Hauff <slmachco@fix.net>
Cc: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
Subject: [22922] Re: old article needed
Message-ID: <Pine.GS0.3.96.981022183141.22872F-100000@moe.cas.utk.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Doug,

Many thanks--and let me know what I owe--either in costs or some favor I
can provide.

To all who graciously offered to search museums, attics, libraries, my
thanks for the offers. Had I a prize to give, it would go not only to
Doug, but to at least a half dozen who have so far offered to help (and I
am not at the end of the inbox mail yet).

Some day I'll invest in that ARRL QST on CDRom offer in this month's QST.
But my Christmas money is pointed at the new models of antenna analyzers
on the market.

My thanks once more to all.

-73-

LB, W4RNL

Date: Thu, 22 Oct 1998 15:43:35 -0700
From: "Radman" <radman@best.com>
To: <micksky@hotmail.com>, "Low Power Amateur Radio Discussion" <qrp-1@lehigh.edu>
Subject: [22923] Re: Identifying IC and Transistors.. (book)
Message-ID: <199810222239.PAA09853@proxy4.ba.best.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

Techamerica Online has a special "Book of the Month" --
Semiconductor Cross Reference Book, by Howard W. Sams &
Co. It offers four cross-references in one. Replacement
data for NTE, ECG, RadioShack and TCE. Includes a list of
OEMs. 671 pages of info. 490,000 listings. Publisher:
Howard Sams.

Cat Number: 920-0033

Reg: \$24.95 SPECIAL: \$12.47

URL: <http://www.techam.com/>

Look under: "Specials" then... "Book of the Month"

.... I'm not a sales rep, etc :-)

GL & 72 - Conrad Weiss - NN6CW

>>>>In my travels I happened upon a small container of
IC's and Transistors.

My question is just what is the quickest way,
(publications or
web-sites) that I can ID these things.<<<<<

Date: Thu, 22 Oct 1998 18:42:37 -0400
From: "J. Duffy Beischel" <jduffy1@ix.netcom.com>
To: Low Power Amateur Radio Discussion <qrp-l@lehigh.edu>
Subject: [22924] SGC 2020 Question
Message-ID: <362FB4DD.27C0DE37@ix.netcom.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Transfer-Encoding: 7bit

I finally received my long awaited 2020. Everything seems to be O.K.
except the frequency display. It is usually off 2 kc's up or down.
Plus many of the memory frequencies are not displayed correctly (the
defaults - I have not changed any of the memories). Anyone else have
this problem?

Regards,

Duffy - WB8NUT

End of QRP-L Digest 1252

